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THE CWC GENERAL PURPOSE CRITERION: HOW TO IMPLEMENT?

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A central provision of the 1993 Chemical Weapons Convention (CWC) is the general purpose criterion (GPC) which prohibits:

> Toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as types and quantities are consistent with such purposes.

Important responsibility for the implementation of this GPC is placed by Article VI on each state party which:

> shall adopt the necessary measures to ensure that toxic chemicals and their precursors are only developed, produced, otherwise acquired, retained, transferred, or used within its territory or in any other place under its jurisdiction or control for purposes not prohibited under this Convention.

Thus far, for quite understandable reasons, the Organization for the Prohibition of Chemical Weapons (OPCW) and the states parties have focused correctly first on the destruction of chemical weapons and of chemical weapon production facilities and then on the verification of Scheduled chemical facilities. It is only in the past year that the OPCW has begun to address verification of the regime for other chemical production facilities — those producing more than 200 tonnes [metric tons=1,000 kg] of unscheduled discrete organic chemicals or more than 30 tonnes of an unscheduled discrete organic chemical containing the elements phosphorus, sulphur or fluorine (Part IX of the Verification Annex).

Although the importance of implementing the general purpose criterion has been recognised by analysts of the CWC and the OPCW, not enough attention has yet been given to how this might be achieved. As Julian Perry Robinson has pointed out:[1]

> the OPCW Technical Secretariat is sighted only towards those 29 chemicals and 14 families of chemicals that are listed in the CWC Annex on Chemicals

and:

> It is the National Authorities therefore, not the OPCW Technical Secretariat, that are primarily responsible for implementing the general purpose criterion which ... is absolutely vital to the future of the treaty

It is encouraging to note that the 1999 Annual Report[2] by the UK National Authority includes mention of the application of the general purpose criterion and concludes that "National authorities need to consider this situation further". In this paper, an analysis is made of some current international initiatives that are addressing chemicals that are of potential risk to public health or to the environment in order to explore how these initiatives might be harnessed to help implement the CWC general purpose criterion.

Toxic Chemicals

There are useful parallels between the increasing controls being introduced to protect public health and the environment on the one hand and the non-proliferation regimes for chemical weapons on the other. An earlier article[3] examined the Prior Informed Consent (PIC) procedure for the export/import of banned and severely restricted toxic chemicals. This article takes a broader look at the international, regional and national initiatives that are addressing chemical safety and the potential risks to the environment and/or to the health of the general public or workers.

There are now several organizations which are involved in activities relating to chemical safety[4] which can be broadly grouped into international, regional, national and trade associations (see Table 1).

In addition to the individual organizations listed there are programmes and groupings which bring together some of these organizations (see Table 2).

Some have been engaged for some decades whilst others have been established following the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992 (the Earth Summit). The six priority programme areas identified under Agenda 21,[5] Chapter 19 *Environmentally sound management of toxic chemicals, including prevention of illegal international traffic in toxic and dangerous products* are:

A. Expanding and accelerating the international assessment of chemical risks;
B. Harmonization of classification and labelling of chemicals
C. Information exchange on chemicals and chemical risks;
D. Establishment of risk reduction programmes;
E. Strengthening of national capabilities and capacities for management of chemicals; and
F. Prevention of illegal international traffic in toxic and dangerous products.

Table 1
Organizations particularly active in chemical safety

Category	Organizations
International	UN Environment Programme (UNEP) Chemicals International Labour Organisation (ILO) Food and Agriculture Organization (FAO) World Health Organization (WHO) UN International Development Organization (UNIDO) UN Institute for Training and Research (UNITAR) Organization for Economic Cooperation & Development (OECD)
Regional	European Union (EU)
National	UK Health & Safety Executive (HSE) US Environmental Protection Agency (EPA)
Trade Associations	International Council of Chemical Associations (ICCA) American Chemical Council (ACC) (previously CMA) European Chemical Industry Council (CEFIC) Japan Chemical Industry Association (JCIA)

Table 2
Programmes and Groupings

Programme/Grouping	Organizations involved
International Programme on Chemical Safety (IPCS) established in 1980 (WHO is the executing agency of IPCS)	ILO, UNEP, WHO
Inter-Organization Programme for the Sound Management of Chemicals (IOMC) established in 1995	UNEP, ILO, FAO, WHO, UNIDO, UNITAR, OECD
Intergovernmental Forum on Chemical Safety (IFCS) established in 1994 (WHO is the administering agency)	Mechanism for cooperation between governments and providing a forum where representatives of governments meet with IGOs and NGOs
Global Information Network on Chemicals (GINC) established in 1994 (UNEP/International Register of Potentially Toxic Chemicals (IRPTC) is the coordinator)	WHO, ILO, UNEP, OECD with the support of NIHS Japan (National Institute of Health Sciences)

The Inter-Organization Programme for the Sound Management of Chemicals (IOMC) was established in 1995 to serve as a mechanism for coordinating the efforts of intergovernmental organizations in the field of chemical safety. It provides extensive listings of ongoing activities under each of the priority programme areas.

The world growth in trade in the 1960s and 1970s led to increasing attention being given to the potential risks to the environment and to public health from chemicals. The United Nations Environment Programme has over the years had a number of initiatives in relation to chemicals. The UNEP chemicals programme has as its goal the making of the world a safer place from toxic chemicals. This is done by helping governments to take necessary global action for the sound management of chemicals, by promoting the exchange of information on chemicals, and by helping to build the capacities of countries around the world to use chemicals safely.

Whilst most chemicals are benign in the concentration levels to which we are exposed to them, others present risks to human health or to the environment. Sustainable development requires the global capacity for the sound management of chemicals. National capacities exist within most developed countries, but to a more limited extent elsewhere. One aim in building global capacity is to extend the sound management of chemicals to all countries — that is, to take steps to ensure that all countries have the information necessary, expertise, and resources to manage chemicals safely under the conditions of production or use in that country. A second aim of global capacity is ensuring that the necessary global actions are taken to address risks that are not dealt with by national actions alone.

Expanding access to information and information tools is one of the primary ways in which UNEP helps countries to develop their capabilities in assessing and managing chemical risks. A wide range of information products have been issued by UNEP Chemicals, such as the International Register of Potentially Toxic Chemicals (IRPTC), often with partner organizations such as the International Programme on Chemical Safety (IPCS) and the Organization for Economic Co-operation and Development (OECD).

European Union

The European Union (EU) had identified the potential risks of chemicals as a policy priority in the 1970s and the 1980s which saw the drawing up of EINECS (European INventory of Existing Commercial Substances) which lists and defines those chemical substances which were deemed to be on the European Union market between 1 January 1971 and 18 September 1981; EINECS is an inventory containing 100,195 substances. Any new chemicals subsequently brought onto the market are included in ELINCS (European LIst of New Chemical Substances); this currently comprises some 4000 notifications in total, representing about 2000 substances, which have been notified since 1981 corresponding to about 400 notifications each year. The Fourth Community Action Programme on the Environment

(1987–92) underlined the need for a legislative instrument which would provide a comprehensive structure for the evaluation of the risks posed by "existing chemicals". The development of the legal instruments in the European Union took place in parallel with the development of new initiatives by the OECD which had led to the launching of an extensive programme in 1988 on existing chemicals, an area in which several EU member states were already active.

European Union Directives require the evaluation and control of the risks to the environment and/or public health of both existing and new chemicals. The European Chemicals Bureau located in Ispra, Italy provides technical support for the development of EU chemicals policy and its website[6] provides information on both existing and new chemicals. The Existing Substances Regulation[7] provides for the evaluation and control of risks posed by existing chemicals in four steps:

Step I Data collection

Step II Priority setting

Step III Risk assessment

Step IV Risk reduction

The data reporting is divided into two broad categories — firstly, data on high production volume (HPV) substances produced or imported in quantities exceeding 1000 tonnes per year, and secondly, data on low production volume (LPV) substances which have been produced or imported in quantities between 10 and 1000 tonnes per year. The data required for HPV chemicals is specified as follows:

Name and EINECS number of the substance

Quantity of the substance produced or imported

Information on the reasonably foreseeable uses of the substance

Data on the physico-chemical properties of the substance

Data on the pathways and environmental fate

Data on the ecotoxicity of the substance

Data on the acute and subacute toxicity of the substance

Data on carcinogenicity, mutagenicity and/or toxicity for reproduction of the substance

Any other indication relevant to the risk evaluation of the substance

The toxicity data requirements are comprehensive:

5.1	Acute toxicity
5.1.1	Acute oral toxicity
5.1.2	Acute inhalation toxicity
5.1.3	Acute dermal toxicity
5.1.4	Acute toxicity (other routes of administration)
5.2	Corrosiveness and irritation
5.2.1	Skin irritation
5.2.2	Eye irritation
5.3	Sensitization
5.4	Repeated dose toxicity
5.5	Genetic toxicity in vitro
5.6	Genetic toxicity in vivo
5.7	Carcinogenicity
5.8	Toxicity to reproduction
5.9	Other relevant information
5.10	Experience with human exposure

The EU Directive makes it clear that industrial and commercial secrecy shall not apply *inter alia* to the name of the substance, the name of the manufacturer, the summary results of the toxicological and ecotoxicological tests.

On the basis of the information submitted and on the basis of national lists of priority substances, the Commission shall regularly draw up lists of priority substances or groups of substances *requiring immediate attention because of their potential effects on man or the environment.* These lists are published by the Commission; three such lists have so far been published.[8] The main motivations for establishing the EU working list are twofold: first as the basis for the priority lists, and second because industry is encouraged to include substances on the working list as by doing so, HEROs (High Expected Regulatory Outcome substances) can be better identified and possible NEROs (No Expected Regulatory Outcome substances) can be removed from the working list if convincing evidence is brought forward by industry.[9]

References and Notes

1. Julian Perry Robinson, "Memorandum submitted by J P Perry Robinson, University of Sussex", Foreign Affairs Committee, Eighth Report, *Weapons of Mass Destruction,* 2 August 2000, Appendix 29, HC Paper 407 of session 1999–2000, p. 203 [also available via http://www.parliament.uk].
2. Department of Trade and Industry, *1999 Annual Report on the operation of The Chemical Weapons Act 1996,* DTI/Pub 4913/2k/6/00/NP, June 2000.
3. Graham S Pearson, 'Toxic Chemicals: A Multilateral Export–Import System', *Chemical Weapons Convention Bulletin,* no 34, December 1996, pp 1, 3–8
4. See for example, Richard Stevenson, "Responsible Care: 10 years on", *Chemistry in Britain*, May 1999, 27-30 and Richard Stevenson, "Clearing the backlog", *Chemistry in Britain,* July 2000, 34-38.
5. Agenda 21 is a comprehensive and far-reaching programme for sustainable development which was agreed by consensus at the Rio de Janeiro summit.
6. European Chemicals Bureau website at http://ecb.ei.jrc.it/
7. European Community, *Council Regulation (EEC) No 793/93 of 23 March 1993 on the evaluation and control of the risks of existing substances,* [available at http://ecb.ei.jrc.it/Directives/793_93.htm].
8. European Community, *Commission Regulation (EC) No 1179/94 of 25 May 1994 concerning the first list of priority substances as foreseen under Council Regulation (EEC) No 793/93* [available at http://ecb.ei.jrc.it/Priority-Setting/priolist01.htm]. European Community, *Commission Regulation (EC) No 2268/95 of 27 September 1995 concerning the second list of priority substances as foreseen under Council Regulation (EEC) No 793/93* [available at http://ecb.ei.jrc.it/Priority-Setting/priolist02.htm]. European Community, *Commission Regulation (EC) No 143/97 of 27 January 1997 concerning the third list of priority substances as foreseen under Council Regulation (EEC) No 793/93* [available at http://ecb.ei.jrc.it/Priority-Setting/priolist03.htm].
9. European Community, *Priority Setting* [available at http://ecb.ei.jrc.it/Priority-Setting/].

The notification schemes for new substances, manufactured or imported within the EU, were first introduced during the 1970s by individual member states. The current version is the 7th Amendment[10] to Directive 67/548/EEC which requires the provision of data, with increasing detail, according to the quantity of the substance placed on the market, *viz:* 10kg, 100kg, 1000kg per year per manufacturer with further toxicological and ecotoxicological testing required at quantities exceeding 100 and 1000 tonnes per year.

Type of Notification	Annual Quantity
Level 2 (1000 tonnes)	> 1000 tonnes
Level 1 (100 tonnes)	> 100 tonnes
VIIA	> 1 tonne
VIIB	> 100kg and < 1 tonne
VIIC	> 10 kg and > 100kg

As an example of the additional data required as the quantity placed on the market increases, the toxicological data requirements are summarised below:

Toxicological testing		Type of Notification
4.1	Acute Toxicity [see note below]	
4.1.1	Administered orally	VIIC, VIIB, VIIA
4.1.2	Administered by inhalation	VIIC, VIIB, VIIA
4.1.3	Administered cutaneously	VIIA
4.1.5	Skin irritation	VIIB, VIIA
4.1.6	Eye irritation	VIIB, VIIA
4.1.7	Skin sensitization	VIIB, VIIA
4.2	Repeated dose	
4.2.1	Repeated dose toxicity	VIIA
4.3	Other effects	
4.3.1	Mutagenicity	VIIB, VIIA
4.3.2	Screening for toxicity related to reproduction	VIIA
4.3.3	Assessment for toxicokinetic behaviour	VIIA

Note:
For acute toxicity testing at VIIC or VIIB one route of administration is sufficient. Gases should be tested by inhalation. Substances other than gases should be tested by oral administration. At VIIA, substances other than gases shall be administered by at least two routes, one of which should be the oral route. The choice of the second route will depend on the nature of the substance and the likely route of human exposure. Gases and volatile liquids should be administered by the inhalation route.
For repeated dose testing, the route of administration should be the most appropriate having regard to the likely route of human exposure, the acute toxicity and the nature of the substance. In the absence of contra-indications the oral route is usually the preferred one.

As the quantity of a new substance increases through Level 1 to Level 2 so the additional toxicological data required converges with the data required for High Production Volume existing substances. The Directive also requires that the substances shall be classified as very toxic, toxic or harmful according to the following criteria:

	Very toxic	Toxic	Harmful
LD_{50} oral in rat, mg/kg body weight	< 25	25 to 200	200 to 2,000
LD_{50} dermal in rat, mg/kg body weight	< 50	50 to 400	400 to 2,000
LC_{50} (inhalation) rat, mg/litre/4 hours	< 0.25	0.25 to 1	1 to 5

The data provided in the new substances notification procedure is used to assign one of the following risk assessments[11] to the new substance:

a. The substance is of no immediate concern
b. The substance is of concern ... assessment revision deferred to tonnage threshold attainment.
c. The substance is of concern ... assessment to be reviewed immediately
d. The substance is of concern ... recommendations for risk reduction to be instigated immediately.

Organization for Economic Co-operation and Development (OECD)

The 29 nation[12] OECD in 1991 adopted a Council decision/recommendation[13]

> considering that strengthened national and co-operative international efforts to investigate systematically and reduce the risks of hazardous existing chemicals will substantially alleviate threats of serious or irreversible damage to the environment and/or the health of the general public or workers ...
>
> DECIDES that Member countries shall co-operatively investigate high production volume (HPV) chemicals in order to identify those which are potentially hazardous to the environment and/or to the health of the general public or workers.

In addition, the decision-recommendation:

> DECIDES that Member countries shall establish or strengthen national programmes aimed at the reduction of risk from existing chemicals to the environment and/or the health of the general public or workers

and:

> RECOMMENDS that, where appropriate, Member countries undertake concerted activities to reduce the risks of selected chemicals taking into account the entire life cycle of the chemicals. These activities could encompass both regulatory and non-regulatory measures including: the promotion of the use of cleaner products and technologies; emission inventories; product labelling; use limitations; economic incentives; and the phase-out or banning of chemicals.

The decision-recommendation also:

> INVITES the Secretary-General to take the necessary steps to ensure that this work is carried out in co-operation with other international organizations and, in particular, in collaboration with the UNEP/IRPTC and the IPCS.

In order to make this task manageable, the OECD decided to concentrate on high production volume (HPV) chemicals — these are chemicals being produced or imported at levels greater than 1000 tonnes per year in at least one OECD country. The chemicals are listed in an OECD list of high

production volume chemicals.[14] In addition, the OECD has agreed a minimum set of data in order to determine its potential hazard — the Screening Information Data Set (SIDS).[15] This enables resources to be concentrated on carrying out further work on chemicals of concern.

Using the data from the SIDS, mainly provided by co-operation with the chemical industry, OECD Member countries prepare a SIDS Initial Assessment Report (SIAR) which highlights any potential risk and contains recommendations for further action, if any, on the chemical. The SIAR is discussed at a meeting of experts from all Member countries, from other international organizations, and from non-member countries, as nominated by the United Nations International Programme on Chemical Safety (IPCS), as well as representatives of the manufacturing companies. The SIAR, amended as appropriate, is made available world-wide by publication by the International Register of Potentially Toxic Chemicals (IRPTC) of the UNEP Chemicals programme. The current aim is to complete SIDS testing for the first tranche of 1000 chemicals on the HPV list — which contains 4,100 chemicals — by 2005.

International Council of Chemical Associations (ICCA) Global Initiative on HPV Chemicals

The global chemical industry launched a global Initiative on High Production Volume (HPV) chemicals on 3 October 1998 at the meeting of the Board of Directors of the ICCA. The goal of this initiative is to prepare harmonized, internationally agreed data sets and initial hazard assessments under the SIDS programme of the OECD. The key element of the ICCA initiative is the improvement of the current database of approximately 1,000 OECD HPV chemicals based on information gathering and where necessary additional testing by the end of 2004.

National Initiatives

Individual countries such as the United Kingdom and the United States of America have adopted particular national strategies to augment the regional and international initiatives into the evaluation of the risk assessment of chemicals. As an example of a national approach, the United Kingdom has recently published a chemical strategy[16] setting out policies to avoid harm to the environment or to human health through environmental exposure to chemicals. This strategy includes the need for precautionary action for chemicals which are likely to cause serious or irreversible damage to the environment and identifies environmental persistence, tendency to bioaccumulate and toxicity as the properties that are especially important. A Stakeholder Forum to be established in mid 2000 will advise the UK government on establishing criteria for rapidly identifying those chemicals which need a risk management strategy as a matter of urgency. These criteria are to be published by December 2000 in order to trigger a structured review process and provide a fast-track procedure for high risk chemicals. The strategy states that all documents considered by the Stakeholder Forum and all records of its meetings will be made available to the public.

The United States of America in 1998 announced the Chemical Right-to-Know (RTK) Initiative[17] which was the US government response to an Environmental Protection Agency (EPA) study that found that very little basic toxicity information is publicly available on most of the HPV chemicals made or used in the USA. It should be noted that the US definition of HPV chemicals is different from that used in the rest of the world as the US definition is a chemical produced in or imported into the USA in amounts of over a million pounds a year — approximately 444 tonnes. The RTK initiative aims to rapidly test chemicals — using the same tests as in the OECD SIDS — and make the data available to scientists, policy makers, industry and the public. An EPA Chemical Hazard Data Availability Study[18] showed that the US produces or imports close to 3,000 chemicals at over 1 million pound a year yet there was no basic toxicity information publicly available for 43 per cent of the HPV chemicals produced in the US and that a full set of basic toxicity information is only available for 7 per cent of these chemicals. The EPA has invited industry chemical manufacturers and importers to participate in a voluntary challenge programme to provide the basic

10. European Community, *Council Directive 92/32/EEC of 30 April 1992 amending for the seventh time Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances* [available at http://europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0032.html].
11. European Community, *Commission Directive 93/67/EEC of 20 July 1993 laying down the principles for assessment of the risks to man and the environment of substances notified in accordance with Council Directive 67/548/EEC* [available at http://europa.eu.int/eur-lex/en/lif/dat/1993/en_393L0067.html].
12. The 29 member states of the OECD are Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, The Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States.
13. OECD, *Decision-Recommendation of the Council on the Co-operative Investigation and Risk Reduction of Existing Chemicals*, C(90)163/Final, 31 January 1991 [available at http://www.oecd.org/ehs/CA90163.HTM].
14. The latest list is OECD, *The 1997 OECD List of High Production Volume Chemicals*, Paris, 1997 [available at http://www.oecd.org/ehs/hpv.htm].
15. Information on the SIDS, the SIDS Manual and the current status of SIDS are all available at http://www.oecd.org/ehs/hpv.htm
16. Department of the Environment, Transport and the Regions, *Sustainable production and use of chemicals — a strategic approach, The Government's Chemicals Strategy*, London, December 1999. Available at http://www.detr.gov/environment/chemistrat/index.htm
17. Environmental Protection Agency, *Chemical Right-to-Know Initiative.* Available at http://www.epa.gov/chemrtk
18. Environmental Protection Agency, *Chemical Hazard Data Availability Study*, prepared by EPA's Office of Pollution Prevention and Toxics, April 1998. Available at http://www.epa.gov/opptintr/chemtest/hazchem.htm

toxicity data on the HPV chemicals they produce. EPA intends that chemicals not adopted in the voluntary programme be tested under the HPV Test Rule. Some 2080 of the 2800 HPV chemicals were adopted by deadline of 1 December 1999. Detailed information on much of this programme is available on the EPA website.

Notification of new chemicals is required in the US under the TSCA (Toxic Substances Control Act) Inventory Update Rule[19] which requires the reporting of basic data every four years on chemicals produced or imported in an amount exceeding 10,000 pounds (4,540 kg ~ 4.5 tonnes). Typically data is provided on approximately 9,000 organic substances each four years. However, unlike the EU notification of new substance requirements, the US requirement does not require provision of toxicity data although proposals are currently being considered[20] to modify the US requirement so as to require the collection of a broad-based database of use and exposure information on chemicals produced or imported in quantities exceeding 25,000 lbs.

Other Initiatives

Although particular attention has been given above to the EU, OECD and ICCA initiatives demonstrating how there is a concerted effort to obtain data both on existing chemicals and on new chemicals placed on the market, it is evident that there are several global activities which are aimed at taking forward the six priority programme areas of Agenda 21, Chapter 19 so that there is sound management of chemicals worldwide. These include:

- The International Programme on Chemical Safety (IPCS)[21] established in 1980 with the WHO as its executing agency. The two main roles of IPCS are to:
  — to establish the scientific basis for safe use of chemicals, and
  — to strengthen national capabilities and capacities for chemical safety

  IPCS products include Health and Safety Guides, Environmental Health Criteria documents, International Chemical Safety cards.
- The Intergovernmental Forum on Chemical Safety (IFCS)[22] established in 1994 which has as one of its functions the identification of priorities for cooperative action on chemical safety particularly taking into account the special needs of developing countries. IFCS has established Priorities for Action[23] for the implementation of the six priority programme areas of Agenda 21 Chapter 19.
- The Inter-Organization Programme for the Sound Management of Chemicals (IOMC)[24] established in 1995 provides a mechanism to coordinate the efforts of intergovernmental organizations in the assessment and management of chemicals. IOMC compiles summary reports of ongoing activities categorized by the six priority programme areas of Agenda 21 Chapter 19.
- The Global Information Network on Chemicals (GINC)[25] initiated in 1994 to foster generation and circulation of chemical-related information among all countries and international organizations for the promotion of chemical safety. The pilot phase is being carried out in the Asia and Pacific region.

Recapitulation

There are already mechanisms in place within nations and regions, such as the European Union which are also reflected in other areas of the world, notably through the OECD and UNEP Chemicals programmes, to respond to the Agenda 21 Chapter 19 priority programme area to expand and accelerate the international assessment of chemical risks. These programmes ensure that data regarding the risks to public health and to the environment is available for both existing and new chemicals.

The data required increases with the quantity of chemical — using the EU situation as a model, the data requirements are as follows:

Annual Quantity	Existing Chemicals	New Chemicals
> 10 kg and < 100kg		VIIC
> 100kg and < 1 tonne		VIIB
> 1 tonne		VIIA
10 to 1000 tonnes	Low Production Volume	
> 100 tonnes		Level 1 (100 tonnes)
> 1000 tonnes	High Production Volume	Level 2 (1000 tonnes)

It is noted that the EU scheme is intended to identify HEROs (High Expected Regulatory Outcome substances) as well as possible NEROs (No Expected Regulatory Outcome substances) and that national schemes, such as that in the United Kingdom, includes the establishment of a fast-track procedure for chemicals that present a high risk to public health or to the environment.

Given that the EU is planned to expand to include many of the Central and Eastern European states and that international trade in chemicals will continue to increase, it is reasonable to expect that the EU requirements for toxicity information on both existing and new chemicals will come to be applied to an increasing extent around the world.

In addition, there is considerable emphasis throughout in making information on the risks posed by chemicals available to the public.

The CWC Requirements

The general purpose criterion within the CWC in Article II.1(a) states that “chemical weapons” include “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”. As chemical weapons, by their nature, involve toxic chemicals which cause death, temporary incapacitation or permanent harm to humans or animals, there is clearly a parallel between chemicals which might be used as chemical weapons and existing or new chemicals which are highly toxic — and are the subject of the ongoing national, regional and international initiatives aimed at ensuring the sound management of chemicals and the reduction of risks to human health or the environment.

In considering how National Authorities in the states parties to the OPCW might implement the general purpose criterion, it is evident that particular attention should be focused on those chemicals that present the greatest risks to public health and that are available in quantity for purposes not prohibited under the CWC. As traditionally, it has been recognised that for a single attack using chemical weapons, a quantity of about 1 tonne is required, it follows that for a militarily significant capability, a quantity of 300 tonnes or more would be needed. Consequently it would be appropriate for National Authorities to utilize in respect of existing chemicals, the data emerging from the ongoing international HPV chemicals programme (for chemicals in the US in excess of 444 tonnes per annum and elsewhere in excess of 1000 tonnes per annum) and, and in respect of new chemicals, the data relating to new substances being placed on the market in quantities in excess of 1 tonne, in order to identify those chemicals that presented the greatest risk to public health. National Authorities could then determine what further action was appropriate to ensure that the national obligations under Article VI.2 of the CWC are being met.

The general purpose criterion also applies to newly encountered hazardous chemicals which might be judged to lack market potential and so fail to enter the reporting systems. Such chemicals may be more toxic than the traditional stockpiled chemical weapon agents — and thus smaller quantities than 300 tonnes may present a risk to the Convention. It is, however, noted that the UK Health & Safety Executive guidance[26] on the notification of new substances states that the regulations apply to anyone who supplies a new substance which "includes selling it, lending it to someone else, passing it on, giving it away or importing it" into the EU. Furthermore, the EU requirements for the notification of new substances do require provision of toxicity information for any new chemical produced in quantities in excess of 10 kg. Whilst it is possible that a significant military quantity (300 tonnes or more for a traditional CW agent — or a smaller quantity for a more toxic novel chemical) of a new chemical that has not been placed on the market could be produced — and thus present a risk to the CWC — it is recognized that the overall trend is increasingly to require the provision of toxicity information on chemicals being produced in a facility for health and safety reasons and for the provision of such information on new chemicals being placed on the market in quantities in excess of 10 kg. National Authorities implementing the general purpose criterion will also need to consider other chemicals, both known and novel, which have not entered the reporting chains in the chemical safety regimes.

From the point of view of the effective implementation of the CWC, there is much to be said for the states parties individually encouraging both the implementation and extension of the international HPV chemicals programme and the EU notification of new substances.

As the general purpose criterion is a central provision in the CWC, it is important that both the fact and the method of its implementation is made generally known. It would be important for National Authorities to report to the OPCW as well as nationally both that they have taken effective action and the nature of this action to implement the general purpose convention thereby strengthening the CWC.

19. Environmental Protection Agency, *The TSCA Inventory Update Rule (IUR)* [available at http://www.epa.gov/opptintr/iur98/].
20. Environmental Protection Agency, *Fact Sheet: Proposed IUR Amendments*, 26 July 1999. Available at http://www.epa.gov/opptintr/iuramend/iurafact.htm
21. For further information on the International Programme on Chemical Safety (IPCS) see http://www.who.int/pcs/
22. For further information on the Intergovernmental Forum on Chemical Safety see http://www.who.int/ifcs/ifcsinfo.htm
23. Available at http://ww.who.int/ifcs/res_2.htm
24. For further information on the Inter-Organization Programme for the Sound Management of Chemicals see http://www.who.int/iomc
25. For further information on the Global Information Network on Chemicals see http://www.nihs.go.jp/GINC/other/aboutginc.htm
26. Health & Safety Executive, *The NONS Regulations.* Available at http://www.hse.gov.uk/hthdir/noframes/nons/nons2.htm

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Progress in The Hague *Quarterly Review no 31*

Developments in the Organization for the Prohibition of Chemical Weapons

Notable events that occurred during the period under review, from mid-June to early September 2000, include the accessions and ratifications of four additional states to the Chemical Weapons Convention (CWC) — Mozambique, the South Pacific island state of Kiribati, Jamaica and Gabon. Mozambique's instrument of accession was deposited at the United Nations (UN) on 15 August, and the country became a member state of the OPCW as of entry into force on 14 September. It is hoped that the three other southern African states not party to the Convention (Angola, Zambia and the Democratic Republic of Congo) will follow Mozambique's example.

The UN Millennium Summit, which took place in New York during 6-8 September, provided an impetus for countries to become states parties to the Convention. The Secretary-General of the UN issued an appeal to all countries for the ratification of the "core" 25 treaties for which he is the depository, including the CWC, before or during the Summit. Following this action by the Secretary-General, the Director-General sent letters to all foreign ministers of states not party to the Convention urging them to ratify or accede to the Convention at the Millennium Summit. Kiribati deposited its instrument of accession on 7 September, the second day of the Summit; entry into force will occur on 7 October. Gabon and Jamaica also chose to take action toward becoming member states during the Summit, depositing their instruments of ratification on 8 September. Entry into force for both countries will take place on 8 October.

The Organization is currently looking to engage more actively states not party to the CWC — in an effort to ensure universal implementation of the Convention. A plan to involve states not party to the Convention in the regime by working through the member state trading partners of such states, and through the regional security and economic organizations to which a majority of countries belong (i.e., ASEAN, OAS, OAU), is being developed within the Secretariat. These efforts, in combination with a focus on national and regional implementing legislation, will ensure that ratification and adherence to the Convention becomes a logical and necessary action for every country in the world.

Executive Council

The Executive Council met in its twentieth session during 27–28 June and reconvened briefly on 1 September to adopt an official report of the session. The session on 1 September led directly into the Council's eleventh meeting, where it discussed substantive issues left over from the June session — specifically the destruction plan for the Russian chemical weapons production facility (CWPF) at Novocheboksarsk, the OPCW–UN relationship agreement, and the financial consequences of the decision of the International Labour Organisation Administrative Tribunal (ILOAT) on the classification of posts at the OPCW.

The Council was originally scheduled to discuss organizational issues at its twentieth session. Consequently, it did not have sufficient time to consider all issues placed on its agenda. Planned discussion of old chemical weapons (OCW) and abandoned chemical weapons (ACW) issues, referred to the Council at its previous session, did not occur; the Council will return to these issues at its twenty-first session in October. Additionally, discussion on fostering international cooperation and consideration of draft resolutions to that effect — submitted by Cuba, Iran and Pakistan to the third Conference of the States Parties (CSP) and referred to the Council for action — did not take place. The Council will also take up this issue at its twenty-first session.

In his opening statement to the Council at its twentieth session, the Director-General noted the Federal Republic of Yugoslavia's submission of its initial declaration and the US submission of declarations regarding unscheduled discrete organic chemicals (DOCs). He urged any states parties that had not yet submitted their initial declarations — at the time both Colombia and Malaysia — to do so as soon as possible. The Director-General also expressed his concern that only 37 states parties had submitted declarations of anticipated activities for 2000. He issued an appeal to all signatory and non-signatory states to consider acceding to or ratifying the Convention either before or during the UN Millennium Summit. The Director-General also stressed the importance of implementing legislation, and encouraged the Council, the Secretariat and those states parties in a position to do so, to assist states in the development of national legislation to implement the Convention.

Verification Implementation Report for 1999 The Council noted the *Verification Implementation Report*, submitted in March. The next such report will be drafted by the Secretariat and submitted to the Council for consideration at its twenty-second session in December. This report will cover all verification-related activities carried out during the first six months of 2000.

Destruction of Chemical Weapons Following concerns expressed by the Director-General in May regarding the lack of notification by Russia of the destruction of Category 3 chemical weapons — in this case powder and burster charges — at facilities in Maradykovsky and Leonidovka, these activities were suspended. The Council will consider draft destruction plans for the two sites at its twenty-first session in October.

A team from the Secretariat visited these Category 3 destruction sites, at which destruction activities had already occurred, during 17–25 April. The team met with Russian officials who provided documentation on the destruction of about 40,000 items at Maradykovsky and Leonidovka, combined; these items were fuses, powder, or burster charges and represented 8 per cent of the declared Russian stockpile of Category 3 chemical weapons. In effect, the destruction of such items, when completed, will take the Russian chemical weapons stockpile "off alert." The team independently verified the destruction of all items with the exception of 22 that were totally destroyed and no identifiable remains could be retained for inventory purposes.

If the Council approves the Russian destruction plans at its twenty-first session, then Category 3 destruction may resume before the end of the year. Plans for the verification of destruction of Category 2 chemical weapons at the Shchuch'ye facility will also be considered at the Council session in October. It is hoped that Category 2 destruction can begin before the end of the year as well.

Combined plans for destruction and verification of the largest Russian CWPF, a VX production and filling facility in Novocheboksarsk, were submitted to the Council at its twentieth session. Although the plans were not approved, the Council decided to return to them as soon as possible and not later than 1 September. At its eleventh meeting on 1 September, the Council decided to return to this matter at its next regular session; however, the Council declared that

Russia could begin Phase I destruction activities while consultations were ongoing.

Destruction Process of Sulphur Mustard In two of the five decisions adopted by the Council at its twentieth session, it approved the destruction by hydrolysis of .3 and .5 tonnes of sulphur mustard by the United States. In line with similar earlier decisions, both of the current decisions mandate sufficient monitoring of the resultant hydrolysate, which is a scheduled chemical (thiodiglycol). The Council reserved the right to approve all such processes on a case by case basis.

Relationship Agreement between the OPCW and the United Nations In his opening remarks, the Director-General encouraged the adoption of the draft agreement on the relationship between the UN and the OPCW, terming it a "political priority"; however, the Council did not reach a consensus on this issue in June. Although, a draft decision authorizing the Director-General to sign such an agreement — pending its approval by the UNGA and CSP — was submitted. The agreement was considered and adopted by the Council at its eleventh meeting on 1 September.

The agreement sets out the overall framework for cooperation between the UN and the OPCW–an essential requirement in light of the fact that the UN Secretary-General is the depository of the CWC and that the UN Security Council may have to become involved in matters of compliance "in cases of particular gravity and urgency."

Guidelines on the Designation of Laboratories for the Analysis of Authentic Samples As recommended by the fifth CSP, the Council approved new guidelines on the designation of laboratories for the analysis of authentic samples. Under these guidelines, to receive designation a laboratory must possess the required quality system and accreditation and receive pass marks (A's and no more than one B) in three consecutive OPCW proficiency tests. Additionally, in order to retain their status, designated laboratories must pass the test once per calendar year. Starting from 1 January 2000, rather than automatically losing their designed status as before, laboratories that fail a test will be suspended temporarily, and may regain their status through the testing procedure. While on suspension, a laboratory will not be selected to receive and analyse off-site samples in accordance with the Convention, but it will be able to perform other duties. Once designation status is withdrawn by the OPCW — as a result of failing or not participating in a proficiency test or by incorrectly analysing a sample — a laboratory has the right to apply to the process again.

The results of the sixth and seventh official proficiency tests were released during the period under review. In the sixth test, of the 24 laboratories (representing 21 member states) that participated, 10 passed the test, 3 received a failure rating, one did not submit a report, and the remaining 10 met the criteria to be scored but received a score of C or D. In the seventh test, 13 of the 18 participating laboratories (representing 16 member states) met the scoring requirements and passed the test, two did not, one did not submit a report, and the remaining two received a C or D. These results indicate that, in total, twelve laboratories have retained their designated status and one has been newly designated; this laboratory can be found in the Russian Federation. Three of the thirteen — those in China, the Czech Republic and the Republic of Korea — are on temporary suspension, meaning that while they retain their designated status they cannot receive off-site samples for analysis.

Those laboratories on temporary suspension are required to submit a full report to the Secretariat, detailing the cause of their lack of performance, before the next test. The eighth proficiency test is scheduled to begin on 8 November.

Status of Implementation of the OPCW Headquarters Agreement The Council noted the Director-General's statement regarding the implementation of the OPCW Headquarters Agreement. The Director-General cited progress in negotiations with the host country on a number of unresolved issues and the positive approach both sides are bringing to the table. He further stressed his hope that these issues would be successfully resolved in time for reporting to the Council at its session in October.

International Labour Organisation Administrative Tribunal At its eleventh meeting, the Council devoted considerable time to discussion of the recent ILOAT decision and its financial implications for the OPCW. On 12 July, ILOAT handed down its judgements in the two cases brought against the OPCW by staff members in June 1999. The complaints were brought regarding the reclassification of OPCW positions — announced in a published note on 7 August 1998 — that was to have taken effect on 1 January 1999, and was subsequently postponed by the third CSP. In the first case, an inspector brought suit, on behalf of himself and other inspectors, in order to implement new guidelines that would have provided for inspectors to be brought in at the P-3 level and promoted to P-4 after "an agreed number of years' experience and satisfactory performance." ILOAT dismissed the complaint on the grounds that the 7 August note does not provide for the establishment of permanent procedures for grade reclassifications. In the second case, ILOAT ruled in favour of the complainants, arguing that by not implementing the 7 August memorandum the OPCW made a "mistake of law." The Tribunal ordered the OPCW to pay costs to the complainants in the amount of 20,000 French francs, and the Organization is to proceed with implementation of the reclassification; 84 posts — upgrades and downgrades — are affected by this decision. Financially, the ILOAT ruling will cost the Organization NLG 2.2 million for 1999 and 2000 combined; this amount is lower than previous estimates.

In his opening remarks to the Council at its 1 September meeting, the Director-General stressed that the implementation of the first classification exercise, mandated by ILOAT, was being carried out as expeditiously as possible, yet without undue haste, and that an appeals mechanism had been established for those staff members wishing to appeal the (re)classification of their posts. Each decision on upgrades of incumbents was based on a thorough

evaluation of their performance. He further emphasised that the ruling would not alter the top structure of the OPCW. The OPCW is able to absorb the costs associated with the ILOAT decision by, inter alia, reorganising the schedule of planned activities for the remainder of 2000 and 2001 and due to available funds in the Inspectorate resulting from the recent inability to authorise new inspector posts, as well as delays in some anticipated chemical weapon destruction activities. The Council deferred any decision on this matter to its next session.

The Director-General expressed his hope that the Organization could soon put this issue to rest and concentrate on the substantive work of its mandate. The second classification exercise is ongoing and will produce its recommendations before the end of the year.

Other Issues The Validation Group met for the seventh time from 5–6 June. The main topic of discussion was the evaluation of new analytical data for inclusion in the Central OPCW Analytical Database. Evaluators were appointed and are expected to have completed their reports by 31 October; at which point the coordinators will forward a summary report to the chairman of the Validation Group by 15 November. The results of the evaluations will be discussed at the eighth meeting of the Validation Group, scheduled for 28–29 November. Version 3 of the database is currently available in PDF/Acrobat format; a CD-ROM version should be available soon. The Secretariat intends to provide all member states with an electronic version of all certified mass spectra by the end of the year.

The Council adopted a decision on the authentication and certification procedure for revisions to the Central OPCW Analytical Database at its twentieth session; it recommended that the sixth CSP adopt the amended procedures for the authentication and certification of revisions to the Database. The decision handed down also recommended that in the future the Council should have the authority to take action on this issue.

The twenty-first session of the Council will be held during 3–6 October and the twenty-second session is scheduled for 5–8 December.

Action by Member States

As stated above, four countries, Mozambique, Kiribati, Jamaica and Gabon, deposited their instruments accession (Mozambique and Kiribati) and ratification (Jamaica and Gabon) with the UN Secretary-General during the period under review.

This brings the total number of states parties, as of the entry into force of the Convention for Mozambique, Kiribati, Jamaica and Gabon — on 14 September, 7 October and two on 8 October respectively — to 139. There are now 35 signatory states.

In addition to the positive action taken by these states, moves toward accession or ratification have been noted in the legislatures of other countries, both in Africa and Asia.

Technical Secretariat

Declaration Processing Yugoslavia submitted its initial declarations in June and Colombia made its submissions in late August. Malaysia is therefore the only state party that has yet to make its initial declarations to the OPCW.

Inspections As of 1 September, 805 inspections had been completed or were ongoing at 383 sites in 42 states parties, including inspections of chemical weapons and chemical weapons-related facilities in China, France, India, Iran, Japan, Russia, UK, the United States and one other state party. Since the first DOC inspection in May, 15 more have been undertaken. The breakdown of inspections is as follows: 14 to ACW sites; 178 to CWDFs; 182 to CWPFs; 115 to CWSFs; 16 to DOC plant sites; 28 to OCW sites; 72 to Schedule 1 facilities; 133 to Schedule 2 plant sites; 61 to Schedule 3 plant sites. OPCW inspectors have spent a total of 49,244 days on mission. Two OCW inspections were carried out during the period under review; these inspections were conducted in accordance with the proposed verification measures for old chemical weapons, which took effect as of 1 June 2000. This provisional approach was outlined by the Director-General to the Council at its eighteenth session.

Also, inspections of industrial sites in the United States — made possible by the US submission of initial chemical industry declarations in April and May — continue. Seven inspections of Schedule 2 facilities and two of Schedule 1 facilities had taken place. Schedule 3 inspections and DOC inspections had yet to be carried out in the United States.

Destruction As of 1 September, the OPCW had overseen the destruction of 5,029 metric tons of chemical agent (Category 1) and 1,337,330 munitions or containers — out of a declared total of 69,859 metric tons of chemical agent and 8,389,000 munitions or containers.

Implementation of Article X A chemical support training course was held during 7–26 August in Sweden.

The annual assistance workshop will be held in Moscow during 9–12 October. The meeting is designed to facilitate discussion and find solutions to issues such as protection equipment compatibility, logistics, training and delivery.

A "Course on the Medical Aspects of Defence Against Chemical Weapons" will be held in Tehran, Iran during 23–26 October. This is the third in a series of medical courses held in Iran.

Implementation of Article XI A "Regional Workshop on Challenges and Opportunities in the Implementation of the CWC" was held in Havana, Cuba during 6-8 June. Twenty Latin American and Caribbean countries — Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guyana, Haiti, Jamaica, Mexico, Panama, Paraguay, Peru, Spain, St. Lucia and Trinidad and Tobago, Uruguay and Venezuela — were represented, and discussion centred on economic issues and plans to achieve universality. In a region where there are no declared chemical weapon stockpiles, states are most concerned with issues of regional and inter-regional cooperation and a

broader agenda of international cooperation under Article XI of the CWC. Also of concern is the issue of the Convention's restrictions on trade in scheduled chemicals and the burden such measures can impose upon their economies.

Training courses for national authority personnel were held during 19–27 June in Ypenburg, the Netherlands, and during 14–22 August in Odessa, Ukraine. Another is planned for 2–10 October in Tunis, Tunisia. This course will be for states parties with little or no previous involvement in implementing the Convention.

Legislative Issues The ban on transfers of Schedule 2 chemicals to states not party to the Convention, which became effective on 29 April 2000, made necessary, for some states parties, the amendment of national implementing legislation to reflect the new restrictions. While many countries foresaw this development and provided for it from the outset, others are now faced with the question of how to regulate trade in scheduled chemicals. This development, in concert with decisions taken at the fifth CSP in May, has led the Secretariat to pursue an agenda heavily focused on legislative issues and helping both states parties and potential states parties to draft appropriate implementing legislation.

In order to aid states parties in this process, the Secretariat undertook a survey of "national measures that have been or will be introduced by states parties to regulate and control scheduled chemicals and their precursors under the Convention". The questionnaire was sent out to states parties on 8 June and responses were requested by 31 July. As of mid-August, about one-quarter of the 135 member states had responded, and work to process those results is currently underway. It is hoped that a majority of the outstanding surveys will be returned in the coming months to enable the Secretariat to make a comprehensive analysis of the data.

In another move related to implementing legislation, the Organisation of Eastern Caribbean States (OECS) submitted to the OPCW a model act for an "Integrated Approach to National Implementing Legislation." The model came out of consultation between the OPCW and the OECS at the February 2000 OPCW Legislation Workshop for Eastern Caribbean States in Castries, St. Lucia. The idea is to enable one piece of legislation to implement the conditions or restraints of multiple regional and international agreements, thereby speeding up the process, especially for smaller countries, of acceding to multilateral treaties. Such an approach would also avoid conflicts between different international agreements and "diminish the administrative burden of separately monitoring regimes." The OECS initiative is modelled on an OECS agreement to regulate pesticides. The OECS has expanded this agreement to incorporate implementation of the statutes of the CWC regarding trade in scheduled chemicals, resulting in the "Pesticides and Toxic Chemicals Control Act and Regulations." Legislation drafted under this plan will enable the governments of OECS member states to regulate pesticides and toxic chemicals for agricultural use together with the regulation of toxic chemicals under the Convention. Such a measure may encourage ratification or accession to the CWC by the five OECS countries that are not currently member states (Antigua and Barbuda, Dominica, Grenada, St. Vincent and the Grenadines and St. Kitts and Nevis), since with the passage of the Pesticides and Toxic Chemicals Control Act, their CWC implementing legislation will already be in place. The OECS approach may also be applicable to other regions with a large number of states in need of implementing legislation, close trade links, no chemical weapons and no substantial chemical industry — such as the South Pacific, Latin America and parts of Africa.

In his opening statement at the twentieth session of the Council, the Director-General referred to the proposal brought by Chile, Peru and Cuba to establish a regional network of legal experts to assist national governments with their implementation processes. The Director-General stated that he hoped that a successful network in Latin America could be used as a template for other regions.

The current emphasis on legislative issues and the national implementation of the Convention will again be addressed at a workshop on legislative issues in October 2000 in Seville, Spain and at the "International Symposium on Cooperation and Legal Assistance for Effective Implementation of International Agreements", scheduled to take place in The Hague in February 2001.

Additionally, a "Regional Workshop on Implementation Legislation and International Cooperation Issues" will be held on 28–30 November in Mbabane, Swaziland. Invited to this workshop are states parties and signatories from the Southern African Development Conference (SADC) — Angola is the only SADC member that is neither a state party nor a signatory to the CWC. The workshop is designed to examine the most efficient means through which to produce a legislative/regulatory framework to implement the CWC.

Official Visits A US Congressional delegation visited the OPCW on 31 August. The delegation was composed of representatives from the House Appropriations Committee. They were briefed by OPCW officials and met with US nationals on the OPCW staff.

On 26 July, officials of the CTBTO PrepCom paid a visit to the OPCW. The CTBTO officials were interested in the experiences of the OPCW as regards entry into force; they are currently looking toward the development of a regime to oversee the future implementation of the Comprehensive Test Ban Treaty (CTBT).

The Director-General paid an official visit to the Czech Republic during 29–31 May. While there, an agreement was reached to hold a training course for OPCW inspectors in that country. This course is currently in a preparatory phase.

The Director-General also visited Cuba during 4–7 June and spoke with Cuban officials regarding their efforts to promote universality of the Convention in the Caribbean region.

The Deputy Director-General visited Japan during 19–23 June, where he met with senior Japanese government officials and with representatives from the Japanese Chemical Industry Association and paid a visit to an industrial chemical plant.

The Deputy Director General was in China during 3-13 September, where he met with Chinese government and chemical industry officials, visited an ACW storage site and spoke to students at Beijing University.

Outreach Activities On 14 July, the Director-General sent a letter to the ministers of foreign affairs of all signatory states and states not party to the CWC — except Niue since it is not a member of the UN — to encourage accession to or ratification of the Convention during the UN Millennium Summit.

A briefing on the activities of the OPCW for delegations based in Brussels was held in Brussels on 25 August.

A regional seminar was held in Beijing, China during 4–8 September; participants were drawn from throughout the region, and notably, from Israel, the United Arab Emirates, Iran, Gabon, Madagascar and the Federal Republic of Yugoslavia.

Staffing In his opening remarks at the twentieth session of the Council in June, the Director-General addressed the topic of the ongoing second job classification exercise. The preparation of job assessments/classifications was completed in July and August, and will be evaluated by an expert team in September. The results of this process will be presented to the Council at its twenty-second session in December.

As of 16 June, Ronald Manley (UK), formerly special adviser to the Director-General, became director of the Verification Division, replacing Jean-Louis Rolland (France) who has retired from the Organization. The new special adviser to the Director-General is Mikhail V. Berdennikov (Russia), formerly assistant to the Deputy Director-General.

Other new appointments include Andrew Beckett (UK), Head of the Office of Confidentiality and Security; Elisabeth Carrio (France), Head of the Budget and Finance Branch; Peter Kaiser (USA), Head of the Media and Public Affairs Branch; and Stefan Zutt (Germany), Head of the Information Systems Branch.

As of 9 September, 481 of the allotted 506 fixed-term posts in the Secretariat were occupied. Of these, 337 were in the professional and higher category and 144 were in the general service category. Including staff on short-term and temporary assistance contracts and others the total number of staff was around 525 from around 64 different nationalities. Women compose approximately 20 per cent of the OPCW staff.

Subsidiary Bodies

Confidentiality Commission A special session of the Confidentiality Commission will convene in late November in order to further review the confidentiality policies of the Secretariat, a task assigned to the Commission by the Council at its eighteenth session.

Scientific Advisory Board Two temporary working groups (TWG) met during the period under review, one on 28-29 August and the second during 30-31 August. The first examined analytical issues and concentrated on which unscheduled degradation products of Schedule 1 chemicals and which riot control agents would be considered for future inclusion in the Central OPCW Analytical Database. The second TWG was convened at the request of the CSP and the Secretary-General to study low concentration guidelines for Schedule 2A chemicals. The issue of implementing low concentration limits as regards industry declarations was resolved during the fifth CSP except for the Schedule 2A chemicals, namely, amiton, BZ and PFIB.

Future Work

The organization of a meeting to bring together exporting and importing countries is a possibility following the session of the Council in October. The Director-General has called for such a meeting to address discrepancies in transfers of Schedule 2 and Schedule 3 chemicals. A decision on this matter should be reached in mid-September.

A workshop will be held in The Hague during 11–12 October for delegations to the OPCW not based in The Hague (from Brussels, London, Bonn, Geneva and elsewhere). The programme will serve to introduce these diplomats to the workings of the OPCW and its Secretariat.

Some of the additional unresolved issues under consideration or to be considered by the Council and the Secretariat include the usability, destruction and verification of O/ACW, an intermediate deadline for Russian Category 1 destruction, plans for the destruction or conversion of CWPFs, concentration limits for mixtures of chemicals containing scheduled chemicals, chemical industry-related facility agreements, restrictions on transfers of Schedule 3 chemicals, and the fostering of international cooperation for peaceful purposes in the field of chemical activities. Plans for informal consultations on these matters and others, to be conducted during the intersessional period, were presented to the Council at its eleventh meeting.

Throughout the remainder of the summer and through the end of 2000, the work of the Secretariat will focus on verification, fostering international cooperation, the previously described legislation initiative, and on its outreach effort to states not party to the Convention; this includes expanding the network of NGO contacts and raising the profile of the Organization internationally. The drive toward universality and the creation of the legislative vehicles necessary to achieve that goal, in combination with the continuous process of monitoring and verification, will dictate the course of the Organization for the near future.

This review was written by Pamela Mills, the HSP researcher in The Hague. The previous researcher, Daniel Feakes, returned to the UK during the period under review. He remains with HSP, on the University of Sussex faculty.

Strengthening the Biological and Toxin Weapons Convention

A four week session, the twentieth, of the Ad Hoc Group to consider a legally binding instrument to strengthen the Biological and Toxin Weapons Convention (BWC) were held in Geneva from 10 July to 4 August. Although as in the previous sessions, negotiations focused on the rolling text of the Protocol, the Chairman initiated a series of bilateral consultations with the representatives of the states parties participating in the negotiations to address those issues in the draft Protocol which had been categorized by the Friends of the Chair as ones on which there were strong conceptual differences in views. Ninety such consultations were held during the four week session. Overall, the July/August session saw a change to less work being carried out in formal sessions and more "give and take" discussion in informal consultations. There was further evidence that the negotiations have entered the endgame by the "bracket bazaar" held on the last two days when a number of square brackets were successfully removed in a series of trade-offs.

In the July/August session, 51 states parties and 1 signatory state participated; a total of two fewer state parties than in March session as 2 states (Cyprus, Thailand) participated in July/August whilst 4 states (Jordan, Mongolia, Panama and Singapore) which had participated in March did not in July/August. The same signatory state (Morocco) participated in July/August as in March 2000.

There was no change to the Friends of the Chair although Dr Anthony Phillips of the UK was shown in the procedural report as Friend of the Chair for Declaration Formats rather than, as in April, as Friend of the Friend of the Chair on Compliance Measures.

There was a modest increase in the number of new Working Papers — to 12 in July/August from 3 in March 2000. The 12 papers (WP.416 to WP.427) were presented by the following states (2 each by France [on behalf of the European Union], Iran, Russian Federation, and South Africa with single papers by Cuba, Germany, UK and the Ukraine). These focused on some of the outstanding issues — for example, 3 were on declaration formats, 2 on Article I General Provisions, and 2 on transfers. One WP (WP. 427 by South Africa) proposed the first text for *Article VIII Confidence Building Measures* with two CBMs — one relating to investigation of outbreaks and the other to national legislation and regulations. The language saying that "Each State Party may at its own discretion..." is much weaker than that for the current politically binding confidence-building measures agreed by the 2nd and 3rd Review Conferences.

The outcome of the July/August session was produced as a complete update of the Protocol issued as Part I of the procedural report (BWC/AD HOC GROUP/52 (Part I). This was thus the thirteenth version of the rolling text – previous versions having been produced in June 1997 (#35), July 1997(#36), October 1997 (#38), February 1998 (#39) and June/July 1998 (#41), September/October 1998 (#43), January 1999 (#44), April 1999 (#45), July 1999 (#46), October 1999 (#47) February 2000(#50), and April 2000(#51). Part I of the August 2000 procedural report included as Annex II copies of the letters and questionnaire sent by Ambassador Noburu of Japan, the Friend of the Chair on the Seat of the Organization, to the Ambassadors of the Netherlands and of Switzerland requesting that the questionnaires be completed and returned by the deadline of 13 October 2000. As with previous procedural reports, a Part II containing an Annex V was again produced containing papers prepared by the Friends of the Chair of proposals for further consideration in which the Part I draft Protocol text is modified in a transparent way. Annex V (Part II text) as usual reflected the structure of the Protocol with Friend of the Chair proposed language for some of the Articles and Annexes of the Protocol.

The July/August session focused on definitions and objective criteria (5 1/2 meetings), Article X measures (5 meetings), compliance measures (4 2/3 meetings), investigations (4 2/3 meetings) and declaration formats (4 meetings) with between 1 1/2 meetings to 1/6 meeting on the preamble, general provisions, confidentiality issues, legal issues, national implementation and assistance and seat of the organization. There were 3 1/6 meetings devoted to plenary meetings. As already noted there were 90 bilateral consultations during the 4 week session.

The AHG meeting as usual saw the presentation and distribution on 13 July by the Department of Peace Studies at the University of Bradford of a further three Briefing Papers in its series: No 29 *Maximizing the Security Benefits from International Cooperation in Microbiology and Biotechnology,* No 30 *Draft Resolution Establishing the Preparatory Commission for the Organization for the Prohibition of Biological Weapons* and No 31 *The CWC Paris Resolution: Unresolved Issues* as well as a further Evaluation Paper: No 18 *The BTWC Protocol: Revised Proposed Complete Text for an Integrated Regime* (all are available at http://www.brad.ac.uk/acad/sbtwc). The Federation of American Scientists did a presentation on implementing legislation on 25 July, repeated on 27 July.

Political Developments

A number of political statements were made between the March and July/August sessions both in Geneva and elsewhere.

On 8/9 April, the XIIIth Ministerial Conference of the Movement of the Non-Aligned Countries meeting in Cartagena, Colombia reaffirmed

> the decision by the Fourth Review Conference urging the conclusion of the negotiations by the Ad Hoc Group as soon as possible, before the commencement of the Fifth Review Conference.... we call on the Ad Hoc Group to conclude its work at the earliest possible date allowing sufficient time for

> the steps which would need to be taken for the consideration of the outcome of the Ad Hoc Group's work at a special conference to be held prior to the BWC's 2001 Review Conference.

A month later, on 24 May, the Final Communiqué of the Ministerial Meeting of the North Atlantic Council in Florence, Italy stated:

> As we celebrate the 25th anniversary of the entry into force of the Biological and Toxin Weapons Convention (BTWC), we continue to regard as a matter of priority the conclusion of negotiations on appropriate measures, including possible verification measures and proposals to strengthen the convention, to be included as appropriate in a legally binding instrument. We reiterate our commitment to efforts to achieve such an instrument as soon as possible before the 5th Review Conference of the BTWC in 2001.

The 75th Anniversary on 17 June of the Geneva Protocol was marked by statements by President Clinton, President Putin and by the French Foreign Minister which all referred to the negotiation of the Protocol. President Clinton said:

> In my 1998 State of the Union address, I called on the international community to strengthen the Biological Weapons Convention with a new international inspection system to help detect and deter cheating. Significant progress has been made in Geneva at the Ad Hoc Group of the BWC States Parties towards achieving this goal. We urge all participants in this process to work toward the earliest possible conclusion of a BWC Protocol that will further strengthen international security.

President Putin in his statement on 17 June noted that a federal bill on the withdrawal of the reservations to the Geneva Protocol made by the USSR in 1928 was tabled on 22 May in the State Duma and went on to say:

> As a depositary country, Russia has constantly advocated the establishment of effective arrangements for monitoring compliance with the Biological Weapons Convention and is taking an active part in the negotiations to develop a protocol to strengthen and improve the convention.

The French Ministry of Foreign Affairs in a statement issued on 15 June said that the Ad Hoc Group negotiations were slow and laborious as they must conclude with new obligations in respect of transparency and control of biological activities, which are dual use in nature. France seizes this occasion to call all the parties to demonstrate the determination necessary to conclude these negotiations before the next Review Conference in 2001.

The G-8 Foreign Ministers meeting in Miyazaki, Japan on 13 July said:

> We will make utmost efforts with others to conclude the negotiations on a Protocol which will effectively strengthen the Biological Weapons Convention as early as possible in 2001.

A somewhat stronger statement was made by the G-8 Heads of State and Government at their meeting ten days later on 23 July 2000 when their Communiqué stated

> We commit ourselves with others to conclude the negotiations on the Verification Protocol to strengthen the Biological Weapons Convention as early as possible in 2001.

At the 33rd ASEAN Ministerial Meeting in Bangkok on 24–25 July the Foreign Ministers in their joint communiqué noted:

> the progress in negotiating a verification Protocol to strengthen the Biological Weapons Convention (BWC) by the Ad Hoc-Group of the states parties to the BWC.

The Chairman's Statement following the seventh meeting of the ASEAN Regional Forum (ARF) meeting (consisting of the 10 ASEAN member states plus Australia, Canada, China, the European Union (EU), India, Japan, North Korea, South Korea, Mongolia, New Zealand, Papua New Guinea, Russia and the United States) held on 27 July stated:

> The Ministers reiterated their support for the work of the Ad Hoc Group of States Parties to the Biological Weapons Convention (BWC) on the negotiations on a verification protocol for the BWC and their call for a speedy conclusion of the said negotiations.

During the July/August Ad Hoc Group session there were some political statements made in the opening plenary sessions on Monday 10 July. Mr Gu Ziping, Deputy Director-General of Arms Control and Disarmament Department, Ministry of Foreign Affairs of China, said:

> we should make further efforts to strengthen the effectiveness of the Convention in a comprehensive and practical manner, so that the humanity can be free of the threat of biological warfare.

Noting that China had been a victim of biological weapons, he said:

> Complete elimination of the threat of biological weapons is of special historical and realistic significance to the Chinese people, which has also been their long aspiration. ... China stands for the early conclusion of a good Protocol acceptable to all

and finished by saying that the Chinese delegation would continue to participate in the negotiations:

> in an active and constructive way and cooperate fully with you [the Chairman] and other delegations so as to achieve an early conclusion of the Protocol.

Ambassador Carlos Amat Fores of Cuba said that "It is essential for my country that the forthcoming Protocol addresses and improves the two mainstays on which Convention builds upon: security and development". He went on to call for the Protocol to respect "the necessary balance between verification and cooperation and assistance measures. ... Should that balance be attained, it would become an important incentive for the universality of the Protocol". He emphasized that "We are convinced on the need to develop an efficient, comprehensive and non-discriminatory, legally binding international instrument".

Ambassador Ali Ashgar Soltanieh of Iran addressed both substantial and procedural issues noting that "Consensus will not be reached unless a balance is made for the promotions and regulatory pillars in the text" and on procedural aspects that "In order to increase the efficiency of the negotiation and the probability of reaching consensus, informal consultations by the chairman and the FOCs could be made with maximum transparency with those delegates mostly involved in the issues in question".

He ended by assuring "the full cooperation of my delegation and its readiness for a constructive negotiation with the hope of the conclusion of our deliberation not later than the timeline envisaged by the Fourth Review Conference".

The Emerging Regime

In the opening session, Ambassador Tibor Toth noted that at the previous AHG session in March 2000, the Friends of the Chair had informally shared their judgement about the level of difficulty of certain issues by categorizing them, using the February AHG/50 (Part I) text as this was the latest version available during the March session, as Cat I "little controversy, relatively easy to resolve", Cat II "medium level of disagreement" or Cat III "strong conceptual differences in views". This informal judgement had been made available to delegations in an electronic format in which the Cat I areas of text were marked in yellow, Cat II areas in green and Cat III areas in red (This categorized version of BWC/AD HOC GROUP/50 (Part I) is available at http://www.brad.ac.uk/acad/sbtwc/ahg50/ahg50.htm). He therefore proposed that a parallel approach should be adopted in the July/August session with the Chairman undertaking some extensive bilateral consultations with delegations seeking conceptual ideas for the resolution of Cat III issues and with the Friends of the Chair focusing on Cat I and Cat II Issues in their sessions and in informal consultations.

The Chairman's bilateral consultations — which totalled some 90 such consultations over the four week session — were structured so as to address clusters of issues: investigations; compliance measures and objective criteria; transfers; cooperation; and legal and other issues and organization. Oral reports were provided by the Chairman at the end of each week about these consultations with a more comprehensive briefing at the end of the session which delegations were asked to consider holistically during the period between the July/August and the November/December sessions.

Rather than as in previous Progress in Geneva reports detailing the progress in the various areas of the draft Protocol, this Progress in Geneva analyzes the principal Cat III issues, grouping them, for convenience, into the same clusters as those in the Chairman's bilateral consultations.

Category III Issues — "Strong conceptual differences in views"

Investigations

Red Light/Green Light Initiation Procedure for Investigations
The Cat III language occurs Article III. G subsection (F) and reads as follows:

> 26. The investigation shall proceed [in the case of a request for a facility investigation] [if formally approved by at least a [two-thirds] [three-quarters] majority [present and voting] of the Executive Council] [unless the Executive Council decides by a three-quarters majority of [all] its members [present and voting] against carrying out the investigation] [and, in the case of a request for a field investigation, if formally approved by a simple majority of the Executive Council members present and voting].

Investigations are the ultimate measure in the Protocol and, on the very rare occasions when they are requested, they do need to take place. These should have the presumption that they will occur — as in the Chemical Weapons Convention (CWC) — and that the safeguards against abuse will be provided both by the Executive Council voting to **stop** an investigation and by the Executive Council deciding on redress should it conclude that there has been abuse. The reality is that such investigations — as with challenge inspections or investigations of alleged use under the CWC — will be extremely infrequent — and provisions already in the text, which mirror those in the CWC, to protect against abuse will suffice. Consequently, a red light initiation procedure is vital to ensure that the Protocol regime is a strong one. A simple green light initiation procedure is not equivalent to a simple red light procedure as the presumption is quite different. Moreover, under a green light procedure absences and abstentions are tantamount to votes against proceeding — especially if majorities are based from the total membership of the Executive Council as opposed to simply those present and voting.

It is possible that consideration may be given to a mixed red/green light procedure with a red light for certain types of investigations and a green light procedure for other types of investigations which could be further divided by having different requirements (simple, two-thirds or three-quarters majority of the Executive Council) for different types of investigations. As the CWC has a red light procedure requiring a three-quarters majority, and the two regimes overlap in the area of toxins, there is much to be said for the Protocol regime being no less strong than that of the CWC.

Request for Assistance being Conditional on a Simultaneous Request for a Field Investigation In *Article VI Assistance and Protection against Biological and Toxin Weapons* there is Cat. III language in paragraph 9 on page 96 of AHG/51 which makes a request for assistance effectively conditional on a similar request for a field investigation.

> [Requests for assistance when a State Party considers that biological or toxin weapons have been used against it shall [not be considered or otherwise acted upon by the Director-General or the Executive Council unless a field investigation request from the State Party making the Article VI request is submitted] [also be accompanied, either simultaneously or within [12] hours, by a request for a field investigation pursuant to Article III, section G].]

There is no parallel requirement in the CWC and there is no obvious reason why assistance under the Protocol should be conditional especially when it is recognised that a state party may well require assistance at a much earlier time, well before it has sufficient information to request a field investigation.

Documentation Availability During Visits/Investigations
There are differences in views about the availability of documentation during visits and investigations. For example, in respect of randomly-selected visits, there is Cat III language in Article III D. II that the visiting team may:

[(c) Examine, with the consent of the visited State Party, documentation relevant to the mandate in order to facilitate the visiting team's understanding of the activities being conducted at the declared facility. The visited State Party shall endeavour to provide such documentation, or to provide alternative means to address the questions of the visiting team if provision of any documentation is denied;]

As visits are non-confrontational measures aimed at building understanding and confidence, such language in the Protocol is helpful in that it enables the visiting team to maximize the benefits from the visit whilst enabling the visited state party to provide alternative means if, for some reason, it decides not to provide the documentation.

In the context of facility investigations, there is Cat III language in Annex D. III that:

[47. If specific issues arise during the investigation, which in the opinion of the investigation team could be resolved by the examination of specific documentation and records not available at the investigated facility, the investigation team may request the receiving State Party to provide access to these specific documents and records for review at the investigated facility in accordance with the provisions of Article III, section G, subsection G.]

Insofar as the documentation in the context of facility investigations is concerned, it is in the interests of the investigated state party to do all that it can to resolve any issues that arise during an investigation — and the provisions in Article III, section G, subsection G include the option for the investigated state party to provide alternative means should it decide not to provide full access to information.

Sampling During Visits/Investigations There are differences again in regard to sampling in both visits and investigations. In respect of visits, there is Cat III language in Article III D. II that:

[(h) Sampling shall not be conducted unless offered by the visited State Party and visited facility personnel and deemed useful by the visiting team. Any mutually agreed sampling and analysis shall be performed by facility personnel in the presence of the visiting team and representatives of the visited State Party. The visiting team shall not seek to remove samples from the facility.]

Sampling is unlikely to be necessary or appropriate in the course of visits and such language is therefore reasonable.

In respect of investigations, differences are in respect of the detail regarding precisely where analysis of a sample shall take place — thus there is Cat III language in Annex D I that "[Analysis [of a part of a sample] should, whenever possible, be carried out on the territory of the receiving State Party]", in Annex D II Field Investigations that "Analysis [of one of the sealed duplicate samples referred to in paragraph 40] shall, whenever possible be carried out on the territory of the receiving State Party", and that "samples shall be analysed in two designated and certified laboratories [in different States Parties]" and in Annex D. III Facility Investigations that "Where possible a sample [shall][may also] be analysed in an accredited and certified laboratory on the territory of the receiving State Party".

In the case of investigations, it is of crucial importance that the analytical results of samples shall be unequivocal and thus that the samples shall be analysed blind in designated and accredited laboratories in at least two states parties with the possibility of further samples being analysed in a designated and accredited laboratory in a third state party should the results from the first analyses be inconsistent. It is unsound and imprudent to suggest that samples from an investigation be analysed **only** in a designated and accredited laboratory in the receiving state party — and this would not be in the interests of the states parties to the Protocol as it could bring the Protocol into disrepute.

In the context of sampling and analysis, it is to be noted that attempts in the Protocol text to set deadlines, for example, for the carrying out of the analysis in the designated and certified laboratories in separate states parties of samples taken during investigations are unwise as there can be no certainty that these designated and certified laboratories will have the capacity available to carry out these sample analyses within a set time. The Protocol regime will fall into disrepute if the analysis of samples is not carried out using the highest international standards.

Access and Executive Council Procedures for Visits/ Investigations There is Cat III language at various points in Article III and in Annex D relating to access, to the report of the visit/investigation and to Executive Council procedures. Thus, there is Cat III language in that the visiting team shall:

[(f) Have the right to state the relevance of questions asked by the visiting team and objected to by the visited State Party; the team leader may ask the visited State Party to reconsider its objection. The visiting team may note in the final report any refusal to permit interviews or to allow questions to be answered without any justification given for any such refusal by the visited State Party.]

that:

[The draft report shall also include an account of the degree and nature of access and the cooperation provided by the visited State Party in order to fulfil the visit mandate.]

and that:

[The Director-General may, with the consent of the visited State Party, provide copies of the final report, on request, to any other State Party.] [The Director-General shall, as a rule, provide copies of the final report, on request, to any other State Party, taking into account the provisions of Article IV, paragraph 4 (d) [, unless otherwise indicated by the visited State Party].]

Likewise in Art III. G regarding access during investigations there is Cat III language that:

[46. The investigation team may, during the course of the investigation, request the receiving State Party to provide access to a facility, building or other structure as objects of investigation within the area(s) designated for investigation [if the field investigation mandate already specifies that access to such a facility, building or other structure may be required, or] if access is required in order to fulfil the field investigation mandate. The investigation team shall, together with its request for access, provide the receiving State Party with information substantiating its request.

and also in respect of the review by the Executive Council of the final report of an investigation that:

> [54. The Executive Council shall, in accordance with its powers and functions as determined in Article IX, section C, review and consider the final report of the investigation team as soon as it is presented, and address [and decide on] any concern as to whether:
>
> (a) Any non-compliance has occurred;
>
> (b) The request had been in accordance with the provisions of this Protocol;
>
> (c) The right to request an investigation has been abused.]

The access provided during visits and investigations is a crucial element of the Protocol regime as it is through access that transparency is demonstrated and confidence is built that the receiving state party is in compliance with the Protocol and the Convention provisions. There are adequate provisions already in the Protocol to protect commercial proprietary information or national security information enabling the receiving state party to use alternative means to meet the requirements of the visiting or investigating teams. It is important that the reports of visits and investigations include factual accounts of the access provided by the receiving state party as this will facilitate the accurate appreciation by other states parties of the effectiveness of the Protocol regime and, over time, build confidence. It should also be recalled that there are extensive provisions enabling the receiving state party to review the report of the visit or investigation and to comment upon that report so that any inaccuracies can be readily countered and corrected. Consequently, reports of visits and investigations should be made available to other states parties as it is through such reports that transparency is increased and confidence is built that the regime is being applied effectively and equitably to all states parties.

Compliance Measures and Objective Criteria

The Cat III issues are considered in three groups — declarations, declaration follow-up procedures and definitions and thresholds.

a. Declarations

Date for Initial Declarations (1925/1946/1975) The draft Protocol contains in Cat III language alternative dates — 17 June 1925 (the date of signature of the Geneva Protocol), 1 January 1946 (the date agreed by the states parties at the Third Review Conferences for the information to be provided under the Confidence-Building Measures) and 26 March 1975 (the date of entry into force of the BTWC) — for the initial declaration of past offensive programmes and an even greater range of dates — of 1 January 1946, 26 March 1975, the date of entry into force for a state after 26 March 1975, 31 December 1991 and five years prior to the first annual declaration for that state party — for the initial declaration of past defensive programmes. In considering these alternative dates, it needs to be remembered why these declarations of past offensive and defensive programmes are required — to build confidence between and increase transparency within states parties to the Protocol. As the states parties to the Convention have already agreed in 1991 as a Confidence-Building Measure to provide information on both past offensive and past defensive programmes since 1 January 1946, and states parties are already politically bound to provide this information, there is much to be said for adopting the same date, 1 January 1946, for the Protocol initial declarations. To adopt a later date would be incompatible with the object and purpose of the Protocol whilst there is no compelling argument for the earlier date of 17 June 1925 especially given the uncertainty that information would be available in full from that earlier date. The date of 1 January 1946 should be adopted for the initial declarations and, as has been the case with the information provided under the Confidence-Building Measures, individual states parties can provide earlier information where that is available thereby providing a more complete appreciation of the past offensive and defensive programmes. Adoption of the date of 1 January 1946 would also be consistent with the CWC requirements for declarations of chemical weapons transfers and chemical weapon production facilities since that date.

It is, however, possible that a compromise may be sought in which the amount of detail sought is related to the date selected with more detailed information being sought for a more recent date. The requirements for past defensive declarations might be more detailed with an effective date being the entry into force of the Protocol or a certain number of years prior to the entry into force of the Protocol. There is no compelling argument for such later dates given that the existing CBMs have been agreed by all states parties and the purpose for these past declarations is to increase transparency and build confidence between states parties.

Testing and Evaluation, Production Information in Declarations Whilst there is general agreement that research and development activities should be declared under the initial declarations of past offensive and defensive programmes and/or activities and under current declarations of defensive programmes and/or activities, there is Cat III language where the words “testing or evaluation, and production” occurs in the requirements for these declarations. This general agreement on the declaration of research and development activities reflects the agreement that such declarations should be made under the politically-binding Confidence-Building Measures agreed by the states parties at the Second and Third Review Conferences. As the **purpose** of **all** the declarations in the Protocol is to increase transparency in and confidence between states parties, it is illogical to provide incomplete information on past offensive and defensive programmes and on current defensive programmes as it is incomplete information that gives rise to suspicions and concerns about compliance. The information provided should cover **all** the activities within these past and current programmes as comprehensive and complete information is vital to increasing transparency and assuring other states parties that activities within a state party are for permitted purposes. However, the requirement for such comprehensive and complete information should be tailored so as to provide transparency and to build

confidence — it does not require and should not seek, for example, information about detailed performance capabilities of current biodefence equipment.

Declaration Triggers (BL-3, Work with Listed Agents, Other Production Facilities, Other Facilities, Outbreaks) A balance has to be struck between those facilities of **most** relevance to the Convention and facilities of some relevance to the Convention. In considering declaration triggers and the associated declaration formats in Appendices A, B and C it is important to bear in mind the information available from the BTWC Confidence-Building Measures on the numbers of biological defence facilities, maximum containment (BL-4) facilities and vaccine production facilities around the world as this gives a useful indication, even though only about half the states parties have provided information, of which triggers and declaration formats will capture information from a greater number of states parties. This information, based on the 1997 CBM responses, shows that some 43 biological defence facilities were declared by 15 countries, some 49 maximum containment facilities declared by 22 countries and some 162 vaccine production facilities declared by 36 countries (The detailed information is on pages 9 & 10 of Evaluation Paper No 18 available on http://www.brad.ac.uk/acad/sbtwc).

From this, it is evident that biological defence facilities are only likely to be declared in a small number of countries (15), and that the addition of maximum containment facilities only increases the number of countries by six. It is only when vaccine production facilities are considered that the number of countries increases by another 15 to a total of 36. Given the Protocol objective of increasing transparency and building confidence between states parties, triggers such as "Other Production Facilities" and "Work with Listed Agents and Toxins" are necessary in order to increase the distribution and spread of relevant declared facilities both within these countries and to additional countries.

The declaration triggers that are currently assigned to Cat. III are the following:

- **BL-3 facilities.** The focus on containment facilities is seen as basically flawed as containment standards are primarily a manifestation of the more developed countries within which there is generally a developed national infrastructure which will monitor and inspect such maximum containment facilities. It is also a fact that countries which have in the past developed offensive biological weapons have done so without using containment facilities. Nevertheless, it is recognized that there is a perception that the capabilities in maximum containment (BL-4) facilities might be misused and therefore should be subject to appropriate compliance monitoring. However, there is not a strong argument for high containment (BL-3) alone as a trigger for declarations.
- **Work with Listed Agents.** There is a need for the declaration of facilities working on listed agents and toxins that also have one or more of the following characteristics:
  — a certain scale of production capability;
  — work on certain types of genetic modification; or
  — work on aerosolization.
- **Other Production Facilities.** It would be illogical to require declaration of vaccine production facilities and not to require declaration of other production facilities although the requirement for declaration needs to be precise so that only the most relevant facilities are declared.
- **Other Facilities.** There is a need for the declaration of facilities which:
  — possess aerosol test chambers for work with microorganisms and toxins;
  — possess equipment for aerosol dissemination in the open air with a particle mass median diameter not greater than 10 microns; or
  — conduct genetic modification within a high containment facility (BL-3) to enhance pathogenicity, virulence, stability or resistance to antibiotics or which are intended to alter the host range, the infection route or the ease of identification or diagnosis.

  This declaration trigger might be combined with the trigger on work with listed agents and toxins.
- **Disease Outbreaks.** The future Protocol Organization will need to have background information on human, animal and plant disease profiles around the world. It is, however, apparent that information on outbreaks of disease is increasingly being reported both officially and unofficially at the national, regional and international level. It is also evident that there is considerable variation between states in which diseases are reported nationally, regionally and internationally. Consequently, a requirement for states parties to report on outbreaks of disease to the future BWC Organization would necessarily result in different reports from different countries because of the different national reporting systems and would also be an unnecessary duplication of existing reporting systems. States parties under the Protocol should be encouraged to improve their disease surveillance systems and their national, regional and international reporting of such information to organizations such as the WHO, FAO and OIE. In addition, it would be useful if states parties would provide copies of such disease surveillance information, to the extent possible, to the future Protocol Organization.

It is to be noted that in its consideration of Declaration Formats in the Appendices to the Protocol, the Ad Hoc Group is engaged in far more detailed elaboration than in the negotiation of the CWC where the detailed declaration formats were addressed in the PrepCom phase.

b. Declaration Follow-Up Procedures

Randomly-Selected Visits to All Declared Facilities The Cat III language relates to two points — first regarding the facilities to receive the randomly selected visits "to [declared] [biodefence and BL4] facilities" and second regarding the purpose of these visits and whether these are "[Promoting accuracy of declarations] [Promoting the accurate fulfilment of the declaration obligations under this Protocol]". Infrequent randomly-selected visits to **all** declared facilities are necessary to ensure that declaration obligations are consistently fulfilled. If such visits were to

be limited to biodefence and BL-4 facilities then there would be very few visits to the majority of states parties. The consequence would be that, should there subsequently be an investigation in one of those states parties which had never been visited by the Technical Secretariat, there would be a greater probability that the investigation may reach an incorrect conclusion because of a lack of understanding of the approaches to microbiology and biotechnology in that country. In addition, in respect of visits, it has to be recognized that the frequency of such visits will be controlled effectively by the Conference of the States Parties through their annual scrutiny and approval of the programme and budget of the Protocol Organization, and it is unnecessary therefore in the Protocol, as in the CWC, to specify an overall limit for the number of visits, of whatever type. Indeed, specification of such a limit in the Articles of the Protocol would be unwise as it would reduce flexibility and further it is inefficient as it would remove the incentive for the future Organization to optimize its operations. Additional visibility of the planned visits could be achieved through the Director-General, every three months, notifying the Executive Council of the overall plan of visits for the forthcoming three months; the overall plan should not include sufficient detail to enable states parties to identify which states parties would receive a visit in the next quarter.

It is possible that certain guidelines might be agreed for the proportions of the three different types of visits with the randomly-selected visits being perhaps about two-thirds of all visits and the remaining visits split in a 2 to 1 ratio between assistance and clarification visits. In addition, the numbers of randomly-selected visits to a state party might range between a lower limit and an upper limit with particular provisions for the frequency of such visits to biodefence facilities. The important thing is to avoid over-prescription of the visits regime as the future Organization must have the flexibility to develop in the light of experience. Afterall, the CWC has shown that there is more than enough control in the Conference of States Parties and the Executive Council of the inspection regime which is not overspecified in the CWC.

Clarification Procedures Regarding Facilities that Appear to Meet the Requirements for Declaration and Have Not Been Declared The language addressing how such clarifications should be processed has been assigned to Category III. There is a need for a non-controversial, non-confrontational and non-accusatory clarification procedure in respect of any ambiguity, uncertainty, anomaly or omission in declarations whether of declared facilities and/or activities or of facilities and/or activities which should have been declared. Such clarification requests should be initiated by the Protocol Organization or at the request of a state party. It is evident from the Organization for the Prohibition of Chemical Weapons (OPCW) experience that there are numerous occasions on which clarification is needed of information provided in declarations received from states parties. Indeed, the OPCW Director-General in his address to the Fifth Conference of the States Parties on 15 May 2000 spoke of "certain implementation-related inconsistencies and technicalities which, unfortunately, continue to occur. However, they are being addressed and corrected". The vast majority of these ambiguities, uncertainties, anomalies or omissions have been resolved through correspondence or consultation with the state party concerned and do not necessarily result in an on-site activity. In some situations, a visit to the facility and/or activity concerned may well be the most efficient and effective way of resolving the ambiguity, uncertainty, anomaly or omission. However, should a state party consider that it has taken all reasonable steps to clarify the ambiguity, uncertainty, anomaly or omission then it can refuse the proposed clarification visit. Such refusals should be reported to the Executive Council. There is much to be said for declaration clarification procedures applying **both** to declared facilities and/or activities **and** to facilities and/or activities that the Protocol Organization or a state party believe appear to meet the criteria for declaration and have not been declared. Safeguards could be incorporated such as recognizing that clarification procedures should not necessarily result in on-site activities and providing a relatively low ceiling for the number of such clarification visits to a state party. Such procedures, with their minimal political profile, will add significantly to the increase of confidence by states parties over time that other states parties are in compliance with the Protocol. Consequently, resolution of such ambiguities, uncertainties, anomalies or omissions from declarations should not become blurred into the C3 (Clarification, Consultation and Cooperation) process of Article III. E which should be reserved as the first stage in addressing non-compliance concerns.

c. Definitions and Thresholds

Definitions There are a number of instances in the Protocol (*Art I General Provisions, Art II Definitions*) where there is language within square brackets, which has been categorized as Cat III, which would have the effect of modifying the BWC. As the mandate for the Ad Hoc Group is *to strengthen the effectiveness and improve the implementation of the Convention* through the consideration of *appropriate measures, including possible verification measures, to strengthen the Convention to be included, as appropriate, in a legally binding instrument*, it is clear that the Ad Hoc Group has a mandate to develop a Protocol to strengthen the BWC — but **not** to **amend** the Convention. Consequently, it is beyond the mandate of the Ad Hoc Group to propose language within the body of the Protocol which in any way amends the scope of the Convention. Whilst it is appropriate for the Preamble to set the Protocol in the wider framework of the Convention and its Review Conferences, care needs to be taken within the Protocol — such as in *Article I General Provisions* or *Article II Definitions* — not to amend the scope of the Convention. The place for considering an extended understanding of the BWC is in the Review Conferences of the Convention where such extended understandings can be and are reflected in the Final Declaration. Two working papers (WP.418 Germany & WP.419 Iran) during the July/August session proposed alternative language for *Article I General Provisions.*

In respect of *Article II Definitions* there has long been a divergence of views as to what should be defined and what should not. There is, however, a general recognition that care needs to be taken to ensure that nothing in the Protocol might be perceived as modifying in any way the basic prohibitions in Article I of the Convention. There is also broad agreement that in order to avoid ambiguity there is a need for definition of some of the terms used in the language relating to the provision of declarations and in other measures. There is much to be said for limiting definitions and objective criteria to those **necessary** for an unambiguous and effective Protocol. This would be in accord with the mandate requirement for the consideration of definitions and objective criteria *where relevant for specific measures designed to strengthen the Convention.*

Thresholds Because of the nature of microorganisms and the ease with which they can be grown, there is less technical justification for thresholds in the BWC Protocol than in the CWC. However, as in the CWC, there is a need for quantitative information in the declarations made under the Protocol and there are therefore quantitative thresholds that will need to be exceeded in order for a declaration to be required. Consequently, the Protocol would be expected to include, where appropriate, the need for declarations when the stated threshold capacities have been exceeded. There is no requirement, however, for the determination of individual thresholds for individual agents and toxins nor is there any requirement for the exceeding of a threshold to be notified to the Organization.

Transfers

Transfer Guidelines (Art III of The BTWC, Non-Impedance of Economic and Technological Development Issues) The Cat III language relates to several elements of *Article III. F. Measures to Strengthen the Implementation of Article III* (of the Convention) as well as to language in Article VII Section (C) referring to maintainance of discriminatory measures or restrictions. As the mandate of the Ad Hoc Group is to consider measures "to strengthen the effectiveness and *improve the implementation* of the Convention" [emphasis added] it is both appropriate and necessary to consider measures to strengthen Article III of the Convention. It needs to be appreciated that in order to permit a transfer, the state making a transfer will need to have confidence that the transfer to a state party to the Protocol is:

a. **only** being used for permitted purposes;

b. **not** being retransferred, without approval, to another facility within the receiving State Party; or

c. **not** being retransferred, without approval, to another State Party to the Protocol.

The requirements are thus three. First, that there should be **transparency** as to what the transferred materials and equipment are being used for. Secondly, that there should be **national internal** controls on the facilities within a state party to the Protocol in which particular agents are handled and on transfers between such facilities. Thirdly, that there should be **national** controls of **interstate** transfers from the state party to the Protocol to other states parties. The Protocol regime should establish minimum standards for transfers and it would be a matter for individual states as to whether they decide that they need to adopt and implement higher standards. It needs to be recognized that over time after the entry into force of the Protocol **for the requesting state,** the state making the transfer should gain greater transparency of activities in the requesting state together with greater confidence that the requesting state has indeed the appropriate **national internal and interstate controls** both in place and in operation — and thus the transfer is more likely to be approved. Such confidence will over time decrease in regard to states who have not become party to the Protocol and it is evident from the CWC experience that a regime in which transfers to non-states parties to the Protocol is likely to become increasingly controlled and prohibited. Such a situation both contributes to enhancing the safety and security of states parties to the Protocol and provides a strong incentive for non-states parties to become party to the Protocol.

Two working papers at the July/August session addressed transfers from rather different viewpoints. WP. 424 by the UK focussed on how to ensure that dual use biological capabilities are used for peaceful purposes only and demonstrated the importance of both the Protocol and effective export controls. It concludes that any genuine remaining problems with export denials can best be dealt with under the Protocol by improving transparency and providing opportunities for dialogue. WP. 426 by Iran addressed the settlement of disputes on transfer denial outlining a possible settlement process under the Executive Council. WP. 426 focuses virtually exclusively on Article X of the Convention and Article VII of the Protocol with Article III of the Convention only being mentioned in the first sentence.

Cooperation

Cooperation Committee Role Whilst there is general agreement about the establishment of the Cooperation Committee, there is Cat III language in respect of some aspects relating to the Committee. Thus, in Art VII, para 13 there is language that:

> [13. [The Committee shall be open to all States Parties] [The members of the Committee shall be elected for a term of two years, on the basis of an equitable geographical distribution, in accordance with Article IX, paragraph ... of this Protocol].]
>
> [13 *bis* The Committee shall be a pluridisciplinary body open to the participation of all States Parties and shall comprise government representatives competent in the relevant fields of expertise. The Committee may establish working groups on an ad hoc basis.]

and in para 15 that:

> 15. The chairmanship of the Committee shall rotate annually between each regional group, as defined in Article IX, paragraph ..., represented in the Committee. [Decisions shall be taken [by consensus] [in the same manner as decisions by the [Conference of State Parties] [Executive Council], in accordance with Article IX, paragraph ...].] [Recommendations shall be agreed by consensus.]

A Cooperation Committee open to the participation of **all** states parties would rapidly become unwieldy as the number of states parties to the Protocol grew. It is therefore appropriate to require membership to be drawn on an equitable geographical basis from among the states parties to the Protocol. The requirement that the Committee be a pluridisciplinary body comprising government representatives competent in the relevant fields of expertise is a statement of the obvious as states parties can be expected to appoint appropriate representatives — after all, there is quite correctly no comparable specification for members of the Conference of the State Parties or for the Executive Council. As to decisions and recommendations, these should be taken by consensus.

Biodefence in Art VII of the Protocol The Cat III language is in respect of all mentions of biodefence in Article VII. The measures in *Article VII Scientific and Technological Exchange for Peaceful Purposes and Technical Cooperation* are an important part of the Protocol contributing **both** to promoting technical cooperation between states parties to the Protocol **and** to increasing transparency and enhancing confidence in compliance. The breadth of activities covered in Article VII including surveillance and countering of infectious diseases, biosafety and good manufacturing practice is welcomed as it is recognized that the infrastructure required by states parties to carry out such activities will indeed, over time, lead to increased transparency and enhanced confidence. Nevertheless, it is important to avoid unnecessary duplication and for the Protocol Organization to concentrate on those measures for which it is particularly well fitted. It would be inappropriate to address biodefence related activities in Article VII although in Article VI, it could be appropriate to note that the states parties may benefit from scientific and technological exchanges pursuant to the provisions of this Protocol, including Article VII thereof.

Legal and Other Issues and Organization

There are several Cat. III issues under this heading. For convenience, they are considered here in three groups: legal issues; other issues; and organization.

a. Legal Issues

Redress Situation — Report to UN General Assembly/ Security Council In *Article V Measures to Redress a Situation and to Ensure Compliance* there is Cat III language concerning which United Nations body the issue should be brought to:

> 4. The Conference or, alternatively, if the case is particularly grave and urgent, the Executive Council, may bring the issue, including relevant information and conclusions, to the attention of the [General Assembly [and] [or] the Security Council of the] [relevant organs of the] United Nations.

There is no reason why this should not be brought to both the General Assembly and the Security Council in exactly the same way as for the CWC.

Dispute Procedure In *Article XII Settlement of Disputes* there is Cat III language, highlighted in bold below, concerning the procedure to address disputes:

> The parties to a dispute [shall] [may] inform the Executive Council of the commencement of consultations, and shall keep the Executive Council informed of the actions being taken [and their outcomes].

In parallel with the CWC Article XIV requirement that "the States Parties involved shall keep the Executive Council informed of actions being taken", it would be logical under the Protocol to require that the parties shall inform the Executive Council of the commencement of their consultations and shall also inform the Executive Council of the outcomes.

Frequency of Review Conferences (5/10 years) In Article XIII Review of the Protocol, the alternatives of **[5][10]** years for the convening of the first Review Conference and the frequency of subsequent Review Conferences are shown as Cat III language. There is much to be said for the first Review of the Protocol occurring within 5 years after entry into force and subsequent Review Conferences at 5 year intervals because this frequency has worked well for the BTWC and is also being used for the CWC — and a first Review Conference after 5 years is clearly not being regarded as too soon in the context of the CWC.

Amendments to Annexes/Appendices There is Cat. III language in Article XIV Amendments regarding proposals for changes in the technical sense of a simplified procedure, distinct from amendments, to Annexes and Appendices of the Protocol:

> [1. Any time after the entry into force of this Protocol any State Party may propose amendments to this Protocol or its Annexes or Appendices. Any State Party may also propose changes, in accordance with paragraph 4, to [the Annexes and Appendices of this Protocol] [specified parts of this Protocol or its Annexes or to its Appendices].

and

> 4. In order to assure the viability and effectiveness of this Protocol, provisions in [sections ... of the Annexes and Appendices] [the Appendices, sections of the Annexes, and those sections of Article III, section D, which are so identified in that Article,] shall be subject to changes in accordance with paragraph 5, if the proposed changes are related only to matters of a technical or administrative nature.

There is a strong argument, as in the CWC, that changes in this sense of a simplified procedure, distinct from amendments, should apply **only** to **specified** parts of the Protocol or its Annexes and Appendices, that **all** changes to Section I Lists and Criteria (Agents and Toxins) of Annex A should be made in accordance with paragraph 5 (thereby paralleling the CWC Article XV provisions in respect of the CWC Annex on Chemicals) and that changes should **not** apply to Annex D or to section I of Annex E (thereby paralleling the CWC Article XV provisions excluding parts of the Verification and the Confidentiality Annexes from the simplified procedure for changes).

Entry into Force There is Cat III language in *Article XX Entry into Force* in paragraph 1 regarding the conditions for entry into force:

> 1. This Protocol shall enter into force 180 days after the deposit of instruments of ratification by [45] [50] [65] [75] [...] States [, including the Governments of the Depositaries of the Convention,] [having advanced biological capabilities and technologies listed in Annex ...] but not earlier than two years after its opening for signature.

The paramount need is to achieve the earliest possible entry into force of the Protocol so that the strengthening of the regime can begin to benefit from the operation of the Organization. A requirement for a large number of ratification instruments before entry into force would delay the strengthening of the regime. With the Organization in existence, with full authority to implement and promote the Protocol, in accordance with Article IX, the Protocol will gather momentum and the number of states parties will increase significantly as confidence grows in the Organization and its operations. A simple numerical condition for entry into force, with no requirement for particular ratifications within this number, is therefore desirable. A requirement for the deposit of 20 ratification would correspond, based on the CWC experience, to a two year interval between signature and entry into force.

Reservations There is Cat III language in *Article XXI Reservations* as follows:

> [The Articles of this Protocol [shall not be subject to reservations] [incompatible with its object and purpose or that of the Convention]. The Annexes and Appendices of this Protocol [shall not be subject to reservations] [incompatible with its object and purpose or that of the Convention].]

It is important that states parties do not enter reservations or exceptions to the Protocol, particularly in the light of the conditions attached by the US Senate to its resolution of advice and consent for United States ratification of the CWC and those within the *Chemical Weapons Convention Bill 2000* passed by the parliament of India. The language in Article XXI should be strengthened:

> The Articles of and the Annexes and Appendices to this Protocol shall not be subject to reservations. In addition, no exceptions or conditions, however phrased or named, including interpretative statements or declarations, which purport to exclude or modify the legal effect of the provisions of the Articles and the Annexes and Appendices to this Protocol in their application to any State, may be made by any State upon signing, ratifying or acceding to this Protocol.

The additional final sentence is necessary in order to prevent, as comprehensively as possible, any attempt to circumvent the ban on reservations by means of statements, declarations, exceptions or conditions which similarly purport to exclude or modify the legal effect of any part of the Protocol in its application to any state.

b. Other Issues

Preambular language There is Cat III language in two places in the Preamble. The first is in paragraphs (9) and (10):

> [(9) Determined to achieve effective progress toward the prohibition and complete elimination of all types of weapons of mass destruction,
>
> (10) Determined also to achieve effective progress toward general and complete disarmament under strict and effective international control,]
>
> OR
>
> [(9+10) Determined to act with a view to achieving effective progress toward general and complete disarmament under strict and effective international control, including the prohibition of all types of weapons of mass destruction,]

and the second in paragraph (23):

> (23) Convinced that to contribute as effectively as possible to the prevention of [the proliferation of] [weapons of mass destruction, including] biological and toxin weapons, and thereby to enhance international peace and security, all States Parties to the Convention should become States Parties to this Protocol,

The language in paragraphs (9) and (10) is closely similar to the preambular language in the CWC and the BTWC and are unexceptional. The alternative combined (9+10) could disappear. The reference to *complete elimination* in paragraph (9) should now be more acceptable following the 2000 NPT Review Conference which in the Final Document in subpara 6 to paragraph 15 records:

> 6. An unequivocal undertaking by the nuclear-weapon States to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament to which all States Parties are committed under Article VI.

This followed the statement by the five nuclear-weapon states in which they state:

> We reiterate our unequivocal commitment to the ultimate goals of the complete elimination of nuclear weapons and a treaty on general and complete disarmament under strict and effective control.

Insofar as paragraph (23), this could with advantage be strengthened to read as follows:

> (23) Convinced that to contribute as effectively as possible to the prohibition and complete elimination of biological and toxin weapons, and thereby to enhance international peace and security, all States Parties to the Convention should become States Parties to this Protocol,

c. Organization

Seat of Organization The paragraph in Article IX The Organization concerning the seat of the organization is assigned to Cat III as two bids have been lodged from the Netherlands for The Hague and from Switzerland for Geneva. The detailed bids have now been called for and, until after these have been provided on 13 October and considered by the states parties, it is uncertain where the seat of the future Organization will be located.

Executive Council representation from Asia/East Asia and the Pacific/West and South Asia The alternatives in Article IX for ... *States Parties from Asia* or ... *States Parties from East Asia and the Pacific* or ... *States Parties from West and South Asia* are all shown as Cat III language. This is primarily a matter for the countries in the region to resolve.

Waiver of Immunity for the Director-General and the OPBW There is Cat III language in *Article IV Confidentiality Provisions* that:

> In case of breaches of confidentiality, the immunity of [the Director-General and] the staff members of the Technical Secretariat [as well as the immunity of the Organization] may be waived in accordance with the provisions on privileges and immunities contained in Article IX of this Protocol and the agreement referred to in paragraph 49 of that Article.

Inclusion of specific language providing for the waiver of immunity for the Organization or the Director-General is tantamount to a prior expression of no confidence in either the Organization or the Director-General. As the absence of an explicit provision for waiver of the immunity of the Organization or the Director-General does not prevent the Conference of the States Parties from taking such action at some future date should it judge that this was necessary, this provision should be deleted from the draft Protocol.

Prospects

The July/August session also saw agreement that the next, twenty-first, session would be a three week session from 20 November to 8 December 2000. During the preceding week, from 13 November, Ambassador Toth would be in Geneva to conduct very intensive informal consultations. The programme of work for the next session was agreed with the 30 meetings allocated as follows:

Compliance measures	2
Declaration formats	2
Investigations	2.5
Article X	2
Definitions	2.5
Ad Hoc Group/Informal	16.5
General Provisions	0.5
Preamble	0.5
Legal Issues	1
National Implementation	0.5
Total	30

The increased number of meetings allocated to Ad Hoc Group/Informal sessions continues the change made in the July/August session to less work being carried out in formal sessions and more "give and take" discussion in informal consultations.

During the 15 weeks between the end of the July/August and the start of the November/December session, delegations can be expected to review with their respective governments their national positions on the conceptual approaches being considered to resolve the Cat III issues so as to develop approaches to reaching consensus on the outstanding issues. There were valuable indications from delegations of a flexibility and willingness to engage in bilateral consultations with both the Chairman and the Friends of the Chair to find solutions.

The July/August session saw further modest progress in the reduction of the total number of square brackets in the Protocol although there is overall a slowing down in the removal of square brackets as the outstanding Cat. III issues are debated and discussed. There continues to be real engagement between the delegations who are addressing how to find solutions to the differences of views which augurs well for the future. There is a real impetus to complete the Protocol before the Fifth Review Conference.

This review was written by Graham S Pearson, HSP Advisory Board

Proceedings in South Africa *Quarterly Review no 2*

The Continuing Trial of Wouter Basson

This report covers the period May–July 2000. A more detailed account is posted on the HSP website.

The trial of Dr Wouter Basson resumed 2 May to begin hearing evidence relating to the human rights violations with which Basson is charged. Besides the fraud charges on which most of the trial thus far been spent, Basson faces 12 murder charges, 5 charges of conspiracy to murder, a charge of assault with intent to do grievous bodily harm and a charge of attempted murder.

The prosecution called to the stand former South African Defence Force soldiers who were part of a clandestine operation known as Barnacle. The operation entailed the establishment of a secret unit which operated within the Special Forces unit of the defence force. Documents presented to the court showed that the unit, established in 1979 and originally called Delta 40 (or D40), then Barnacle, and eventually the Civil Co-operation Bureau, had as its chief objective, the elimination of identified State enemies and the conduct of "super-sensitive" covert operations, which could include eliminations. These super-senstive covert operations included the capture and 'turning' of SWAPO members who would be used to penetrate behind enemy lines and to conduct pseudo operations.

Former members of the unit explained that they had been required to murder the SWAPO members because the

prisoners of war could not be 'processed through normal channels' and imprisoned, as this would immediately compromise the pseudo operations programme. Witnesses said it was decided that the bodies of the victims should be dumped in the sea from an aircraft, leaving no traces.

Initially, witness and former operator Johan Theron was required to murder the victims by strangling them, but soon he requested that a more humane method of killing the victims be found. He told the court Basson suggested the use of the drugs tuberine and scoline, muscle relaxants which in overdose would cause the victim to suffocate to death. Basson denied these allegations. Theron said he believed he had murdered up to 200 SWAPO members in this way.

The court heard details of a human experiment conducted by medical doctor Dr Jakobus Bothma. Bothma testified about his role in the murder of three men after having smeared a substance on their skin to see what effect it would have on them. He told the court that he had been given the substance and instructions by Basson.

On 15 May, former Civil Co-operation Bureau operator Pieter Botes testified for the prosecution. He said that shortly before the Namibian elections in 1989 he was given four brown glass jars by the head of the Civil Co-opertion Bureau, Joe Verster, and told that two contained cholera bacteria, the others yellow fever germs. Botes went to Namibia and while there, received the order from Verster to contaminate the water supply at two refugee camps outside Windhoek with cholera and yellow fever.

The evidence of operators of Barnacle and the Civil Co-operation Bureau was followed by the testimony of the scientists. Bio-engineer Jan Lourens spoke about his role in the development of poison applicators, murder weapons which could carry poison. Scientists at RRL spoke of their role in the development of assassination weapons. Former head of research at RRL, Dr André Immelman, testified that Basson introduced him to four people and instructed him to provide them with toxins as they required them. Immelman identified three of the men as members of the South African Police. Immelman also said he had delivered three cans of beer contaminated with botulinum to Basson in 1989.

Immelman's testimony raised questions about international assistance to the South African programme when he testified that in 1984, while in America doing research, his American host suggested he spend time in the laboratory library. He was shown to a smallish room and soon realised that every title on the shelves and every publication dealt with CBW. On returning to South Africa, Immelman spoke to RRL's security staff and urged them to train employees on how to handle such situations when abroad.

Immelman testified that a P4 laboratory was planned in 1987/88 as an expansion of RRL.

Details were provided through the evidence of scientists formerly employed at Delta G Scientific (the chemical warfare facility of Project Coast) about projects to synthesize peptides, and about work done at Basson's request on the treatment of AIDS.

It is expected that more evidence about the human rights violation charges will be heard towards the end of this year. The trial adjourned until 31 July.

This report was written by Chandré Gould and Marlene Burger, of The Chemical and Biological Warfare Research Project at the Centre for Conflict Resolution, an independent institute associated with the University of Cape Town.

News Chronology May through July 2000

What follows is taken from issue 49 of the Harvard Sussex Program CBW Chronicle*, which provides a fuller coverage of events during the period under report here and also identifies the sources of information used for each record. All such sources are held in hard copy in the Sussex Harvard Information Bank, which is open to visitors by prior arrangement. For access to the* Chronicle, *or to the electronic* CBW Events Database *compiled from it, please apply to Julian Perry Robinson.*

1 May In the United Kingdom, there are newspaper reports that hospitals and health authorities have been warned to make emergency plans in case of terrorist use of biological weapons. The Department of Health had issued guidance issued to all National Health Service trusts, ambulance services and directors of public health last month. In the event of an attack, joint health advisory cells, combining local police and medical authorities, would be set up. The Department reportedly considers the likelihood of an attack to be low, and its spokesman has said that the purpose of the new guidance "is to enhance our ability to respond to an attack, although there is no suggestion any group is planning one". The head of health policy and research of the British Medical Association, Vivienne Nathanson, is, however, reported as saying: "The level of risk is at an all time high because the technology is making it easier".

1 May In New York, during the 2000 Review Conference of the nuclear-weapons Non-Proliferation Treaty, France issues a common statement on behalf of itself and Britain, China, Russia and the United States, in paragraph 5 of which the five nuclear powers say: "We reiterate our unequivocal commitment to the ultimate goals of a complete elimination of nuclear weapons and a treaty on general and complete disarmament under strict and effective international control". In the final document from the conference, which is a consensus statement by all 187 states parties agreed on 20 May, this commitment becomes an "unequivocal undertaking to accomplish the total elimination of their nuclear arsenals".

1 May The US State Department releases its nineteenth annual terrorism report [see 30 Apr 99], *Patterns of Global*

Terrorism 1999. The report says there were 392 international terrorist attacks during 1999 as compared with 274 during 1998. In 1999, 233 people were killed and 706 wounded in such attacks, compared with 741 killed and 5,952 wounded in 1998. The list of state sponsors remains as before: Cuba, Iran, Iraq, Libya, North Korea, Sudan and Syria. On WMD terrorism, the report says that "in 1999 the possibility of another terrorist weapons of mass destruction (WMD) event — a chemical, biological, radiological, nuclear (CBRN), or large explosive weapon — continued to increase". During the briefing accompanying the report's launch, Michael Sheehan, the State Department's counterterrorism coordinator, replies to a question on terrorist possession of WMD as follows: "Right now we know that there are some that are seeking to acquire weapons of mass destruction. And some, such as Aum Shinrikyo, have used it in the past, although fortunately only 12 were killed in that attack in the Tokyo subway with the sarin gas. Others are trying to acquire it, but I couldn't comment now whether any of them have a capability to deliver a serious weapon of mass destruction; I believe not. But we are very concerned about them trying to acquire that capability".

2 May In Pretoria Court, proceedings resume in the trial of Brig Dr Wouter Basson. For further details, see *Proceedings in South Africa* above.

2 May In Washington, the National Academy of Sciences holds a public symposium on *Biological Weapons and Bioterrorism* as part of the annual meeting of the academy. Moderated by Paul Doty, the symposium is divided into two parts; the problem of biological weapons and bioterrorism, and strategies for prevention and response. There are presentations by Matthew Meselson ("Historical and technical aspects of biological weapons"), Bruce Hoffman ("Assessing the threat of bioterrorism") and Joshua Lederberg ("Future challenges from infectious disease — what evolution has in store for all of us") during the first part, and by Donald Mahley ("International prohibition of biological weapons"), John Steinbrunner ("Broader international approaches") and Donald Henderson ("US government response to possible bioterrorism") during the second. The last of these presentations is critical in tone. Dr Henderson states: "We are today ... little better prepared to deal with the challenges of bioterrorism than we were five years ago when Presidential Decision Directive 39 was issued [see 22–23 Apr 98]. ... [A] considerable expenditure of funds and energy has produced very little of relevance for dealing with the consequences of bioterrorism. ... Standby emergency teams are clearly not the answer, especially for bioterrorism, given the belief that such events in any given area are expected to be infrequent to rare, although potentially catastrophic should they occur."

2 May In Maryland, a civilian microbiologist working for the US Army Medical Research Institute of Infectious Diseases (USAMRIID) at Fort Detrick is admitted to Frederick Memorial Hospital and is transferred to Johns Hopkins two days later, where, on 9 May, he is diagnosed as having glanders, the first human case in the USA since 1945 when the disease was being studied at Detrick as a candidate biological-warfare agent. It is later reported that the patient began suffering symptoms in March but continued working at USAMRIID, although he did consult his personal doctor, until he was hospitalised. Following the diagnosis, a review of laboratory safety procedures is undertaken. A report into the incident is issued on 23 June by USAMRIID, the two hospitals involved, local health authorities and the Centers for Disease Control (CDC). The report does not explain how the researcher contracted glanders, but he had occasionally handled laboratory equipment without wearing gloves. The CDC recommends gloves for work in BL-3 laboratories such as the one in which the researcher was working. The report also emphasises the difficulty of characterising unusual agents such as those which might be used in a bioterrorist attack using routine laboratory techniques. Although glanders can be fatal in humans, the unidentified worker recovers.

3 May The American Medical Association, in today's issue of its Journal, publishes detailed recommendations for measures to be taken by medical and public health professionals in the event of plague being used as a biological weapon against a civilian population. This is the third in a series of articles on possible biological weapons [see 9 Jun 99 and 12 May 99]. Like the earlier articles (dealing with anthrax and smallpox) the publication is a consensus statement by 19 specialists from the Working Group on Civilian Biodefense, organised out of the Johns Hopkins Center for Civilian Biodefense Studies.

3–5 May In Singapore, the OPCW Technical Secretariat joins with government authorities in conducting a regional seminar on the CWC. The aim is to encourage national authorities in the south-east Asian region to cooperate in their implementation of the treaty. There are 72 participants from 23 member states (Armenia, Australia, Bangladesh, Brunei Darussalam, China, India, Indonesia, Iran, Jordan, Laos, Malaysia, Morocco, Oman, the Philippines, Poland, Romania, Russia, Saudi Arabia, Singapore, Sudan and Uzbekistan.

4 May In Melbourne, Peter Dunn dies, aged 71. He had retired in 1993 after 42 years of service in Australian defence research, much of it at Maribyrnong on aspects of CW. He had then served until 1997 as coordinator of the UNSCOM Chemical and Biological Weapons Working Group [see 21 Jun 93], drawing on his experiences during the 1980s as a member of UN teams of experts that investigated reports of chemical warfare during the Iraq–Iran War and then as leader of the first UNSCOM inspection of the Iraqi CW establishment at Muthanna [see 14 Jun 91].

4 May In the US House of Representatives, a hearing on terrorism preparedness is conducted by the Oversight, Investigations and Emergency Management Subcommittee of the Transportation and Infrastructure Committee. Under consideration is the *2000 Preparedness Against Terrorism Act*, a bipartisan bill (HR 4210) proposed by two members of the subcommittee, its chair Tillie Fowler and James Traficant. The latter states that the bill was a direct response to concerns which were raised at the subcommittee's two previous hearings on terrorism preparedness [see 9 Jun 99]. The subcommittee hears views on HR 4210 from two panels of witnesses, one consisting of representatives of first-responders and the second of representatives of the lead federal agencies. The General Accounting Office testifies that HR 4210 would address some of the fragmentation problems which it has found in providing assistance to state and local governments, but that it would not resolve some of the overall fragmentation problems in federal programmes to combat terrorism.

4 May President Clinton nominates Owen Sheaks for the post of Assistant Secretary of State for Verification and Compliance [see 31 Mar 99]. Dr Sheaks is to be responsible for the overall supervision within the State Department of matters relating to

verification and compliance with international arms control, nonproliferation and disarmament agreements.

4 May In Iraqi Kurdistan, there is a ceremony to mark the twelfth anniversary of the use of chemical weapons by Iraqi forces on the villages of Goptapa and Askar. The head of the regional government, Kosrat Rasul Ali, announces the allocation of 500,000 dinars to reconstruct and develop the region.

4 May In San Francisco, a three-judge panel of the 9th Circuit Court of Appeals rules that police use of Pepper Spray to subdue non-violent demonstrators may be an "unreasonable use of force" in some cases and therefore may be in violation of the Fourth Amendment of the US Constitution. The ruling overturns an earlier ruling in which a federal district judge dismissed a civil rights suits filed by protestors. The case arises out of demonstrations by environmental activists in September 1997 against increased logging in the Headwaters Forest by Pacific Lumber [see 8–9 Oct 98]. In an effort to move protestors who had chained themselves together, Humboldt sheriffs had applied Pepper Spray to the eyes of non-violent activists. Judge Harry Pregerson, who wrote the 9th Circuit decision, states: "The officers applied the pepper spray with a Q-tip to the closed eyes of both protestors. Despite the protestors' pleas for water to flush the pepper spray out of their eyes, one of the officers can be heard on the videotape saying that they will only be given water if they release and that the pain will only get worse in 30 seconds when he sprays the OC in their faces. A minute later, he sprayed the OC directly into both of the protestors' faces in short full bursts from inches away. The videotape reveals that the blast of pepper spray ran down one protestor's face and into his mouth." The attorney representing the Humboldt law enforcement agencies says that she will be seeking a review of the ruling by a larger panel of 9th Circuit judges.

5 May In Canada, a military court rules that air force sergeant Mike Kipling was within his rights to refuse an anthrax vaccine in 1998 while serving in the Gulf. Sergeant Kipling had been facing a court-martial [see 2 Dec 98] but the military court ruled that the vaccine could have been unsafe and that Kipling's basic human rights under Canada's Charter of Rights and Freedoms had therefore been jeopardized. The vaccine was produced by a Michigan company, MBPI [see 7 Jul 98]. In March 1997 the US Food and Drug Administration had threatened to revoke MBPI's licence, citing deviations in record-keeping and quality control going back to 1993.

5 May At Suffield, Alberta, Canadian Defence Minister Art Eggleton unveils a memorial to the Canadian troops who had participated there during the second world war as human guinea pigs in Allied trials of new forms of protection against mustard gas and other chemical weapons. Around 2,500 Canadian servicemen had participated in wartime tests to improve protection against mustard gas. Many of them suffered burns and others longer-term health problems. The Canadian government began paying pensions to the veterans in 1995. The plaque at Suffield reads: "In recognition of those who suffered that their comrades in arms might be spared the horrors of chemical warfare. They also served".

7 May In Bahrain, a conference of military delegations from the Gulf Cooperation Council and the United States opens in Manama with a focus on weapons of mass destruction.

7 May In the United Kingdom, the Ministry of Defence re-opens an inquiry into a series of deaths and serious illnesses amongst staff at the Nancekuke chemical defence establishment in Cornwall [see 18 Jan 00]. During its years of operation there had been 41 deaths and a high rate of serious illnesses. A report in 1970 claimed that this was in line with national averages. A second report, *Sickness Experience at Nancekuke*, which studied medical records from 1959 to 1969, showed staff at the plant were 33 per cent more likely to suffer from serious illnesses and 50 per cent more likely to suffer respiratory diseases. According to the *Independent* newspaper, the report was suppressed at the time. Following a meeting between the local Member of Parliament, Candy Atherton, and Defence Procurement Minister Baroness Symons, statisticians are to re-examine the evidence and conclusions of the sickness report.

7–12 May In Switzerland, AC-Laboratorium Spiez plays host for the third time to an international meeting of the chemical and biological medical treatment symposium series, CBMTS-III [see 7–12 Jul 96]. The symposium is the sixth general meeting in the CBMTS series [see 25–31 Oct 98]. Participating are 98 scientists from 29 countries.

8 May In South Korea, the *Chosun Ilbo* reports that the Ministry of National Defence has built a secret facility in Yongdong County, in the central part of the country, to destroy stocks of chemical weapons, said to amount to several hundreds of tons. The Ministry refuses to comment officially on the report, but says that it is taking its responsibilities under the Chemical Weapons Convention seriously [see 28 Sep 97]. The Ministry of the Environment acknowledges the plant's existence but denies that it has already started operating: "The plant is not operating and the issue of whether to begin operation will be decided by the ministries concerned only after this July, when a survey team from the [OPCW] completes an on-site inspection of the facility". The chief of Yongdong County, Park Wan-jin, says that he had not been informed of the facility, and, on 9 May, local residents send a letter to the defence ministry demanding explanations about the possible effects of the facility on their health and environment.

8 May In India, where new legislation on CWC implementation is shortly to be introduced into parliament, a Cabinet note on the matter is reported in *The Statesman*, which says that the bill now being readied seeks to "deny or restrict inspections where India's national security interests and economic well-being are in jeopardy". The report also states that a "high-level steering committee" has been studying the US CWC-implementing legislation, certain features of which are reflected in the draft bill, notably a provision that samples taken during inspection of Indian industrial facilities may not leave the country.

On 15 May, the government, in the person of Chemicals and Fertilizers Minister Suresh Prabhu, introduces a new *Chemical Weapons Convention Bill* [see 2 Jun 98] into the Rajya Sabha, which is the upper chamber of parliament.

8 May In the United States, the civil chemical industry receives its first OPCW inspection, at a Schedule 2 plant-site. The US initial Schedule 1 and 2 declarations had been submitted to the OPCW on 28 April, almost three years late. A Bureau of Export Administration press release quotes Assistant Secretary of Commerce Roger Majak as saying: "We've had good cooperation from the US industry to make these inspections possible, and we expect them to be reassuring to

everyone that there is no cause for concern about diversions or misuse of chemicals from US producers". The release also reports that 84 US facilities to be inspected handle chemicals "considered most sensitive" under the CWC, while information on approximately 475 sites producing unscheduled discrete organic chemicals is still being processed. Around 18 US chemical industry plants are expected to receive OPCW inspections in 2000.

8 May In the US Congress, the General Accounting Office reports that the United States is unlikely to meet the CWC deadline of 29 April 2007 for destroying its chemical weapons stockpile. Although 17.7 per cent of the stockpile had been destroyed as of 31 January 2000, the GAO estimates that the army will only be able to destroy 90 per cent of the total stockpile within the deadline. According to the report, there are two primary reasons for the predicted shortfall. Two chemical-weapons destruction facilities — at Blue Grass, Kentucky and Pueblo, Colorado — which between them hold around 10 per cent of the stockpile are unlikely to meet the 2007 deadline. It is also possible that the Army will not have destroyed all of the recovered chemical warfare materiel and a chemical-weapons production facility at Newport, Indiana before the deadline. The GAO report also concludes that, due to these delays, the total cost of the chemdemil programme is likely to exceed the Army's current estimate of $14.9 billion [see 3 May 96].

8 May In Utah, at the Tooele Chemical Agent Disposal Facility [see 11 Jan], automatic stack monitors detect a vapour release of sarin nerve-gas; alarms sound, and the incinerator is shut down. An estimated 18 mg (later, 22 mg) of agent had escaped. The release is described as the first ever in the chemdemil incinerator's four-year history. There had been another alarm two days previously during the unpacking of a leaking sarin-filled 115-mm rocket warhead. The Centers for Disease Control and Prevention are called in to investigate and subsequently report that "no short-term or long-term adverse health effects are expected for TOCDF workers or the surrounding population". The Utah Department of Environmental Quality had reached a similar conclusion. The state gives its approval for partial resumption of operations two months later.

11 May In the United Kingdom, the House of Commons Defence Select Committee issues the report of its investigation into Gulf veterans' illnesses, which is to be continued. Both the report and its recommendations are detailed. The chief conclusion is as follows: "In launching its new approach to dealing with Gulf veterans' illnesses in 1997, the government said that it has a 'debt of honour' to those who have served in the Armed Forces. We agree. We believe that the government has gone a considerable way towards meeting that debt in its efforts to research possible exposures which may have led to veterans suffering ill health and in putting the findings in the public domain. However, it may be necessary now to accept that precise causes may never be found and to focus attention instead on improving the current circumstances of ill Gulf veterans."

12–14 May In The Hague, the OPCW Technical Secretariat hosts the second annual joint meeting of CWC National Authorities and representatives of chemical industry. Opening the meeting, the acting director of the Secretariat's Verification Division, Ron Manley, says that its purpose is to inform participants of "the developments in relation to the implementation of the Convention which have occurred since the forum last met [see 26–27 Jun 99] and to review some of the related issues that have arisen out of the implementation of the industry verification regime under Article VI". The meeting attracts large participation: participants include 127 representatives of 69 National Authorities.

There is first a workshop co-organised with The Netherlands on the role of customs organisations in the implementation of the Chemical Weapons Convention. This is followed by an information update given by the Secretariat. Then there are closed National Authorities regional working groups. Finally there is a joint session with chemical industry representatives, during which issues relating to inspection planning under Article VI and Schedule 1, 2 and 3 inspections are discussed.

14–19 May In Switzerland, at Spiez, the government convenes the second of the international emergency field laboratory courses (SEF-LAB II) it is offering as part of the Swiss CWC Article X assistance effort [see 14–19 Nov 99].

15 May UN Secretary-General Kofi Annan writes to heads of state and government urging them to express support for the international legal framework during the Millennium Summit, which is to be held in New York in September. In particular, he encourages participation in 25 core treaties which he describes as "representative of the Organization's key objectives", among them the Chemical Weapons Convention.

15–19 May In The Hague, the OPCW Conference of the States Parties reconvenes [see 28 Jun–2 Jul 99] for its fifth session. Participating are about 500 persons from 109 of the 133 states parties, from the two contracting states, from 7 of the 37 signatory states, from one of the nonsignatory states, from 3 international organizations, and from 16 non-governmental organizations and chemical industry associations.

16 May In the United States, CBS News reports on biological weapons trials conducted in the 1960s. The tests, codenamed Autumn Gold and Copper Head, took place off Hawaii and Newfoundland respectively. Posted on the CBS website is a contemporary Pentagon briefing film obtained by CBS News which adds to the information on the Copper Head trials, which were conducted during January 1965. The trials were requested by the Navy to test the vulnerability of ships to biological weapons. While the Autumn Gold series tested ship penetration by a cloud of BW-agent simulant (BG — *Bacillus globigii*) in a temperate marine climate, the Newfoundland trials were conducted in a cold marine environment. A total of nine trials were conducted using Marine Corps A-4C Skyhawk aircraft equipped with Aero-14/B spray tanks. The CBS programme describes how a jet released BG upwind of the target ships, after which another plane released fluorescent particles of zinc cadmium sulphide. Crew on board the ships were required to give throat swabs or gargle samples. Reacting to the CBS report, the Pentagon offers a written statement in which it says that sailors "were not exposed to any harmful chemical and biological compound" and that they "were all fully informed about the details of each test".

16 May In the US House of Representatives, 35 members sign a letter to Secretary of Defense William Cohen calling for an immediate halt to the Anthrax Vaccination Immunization Program (AVIP) [see also 5 May Canada]. The letter states that AVIP "is a flawed policy that should be immediately stopped and re-examined in light of the growing preponderance

of evidence challenging the DOD's position". In a response from the Defense Department, Under-Secretary of Defense Charles Cragin writes: "I know there is a well-documented threat that is more real today than ever. ... Anthrax is a deadly biological warfare agent that at least ten nations including North Korea and Iraq are known to possess or have in development."

17 May In Moscow, Russian Foreign Minister Igor Ivanov meets with his UK counterpart, Robin Cook, who is in Moscow for the opening of the new British Embassy. Their discussions mainly focus on the development of agreements reached by President Putin and Prime Minister Blair at their recent meeting, but also touch on the elimination of chemical weapons.

17 May The OPCW Executive Council submits to the fifth session of the Conference of the States Parties the *Report of the Organisation on the Implementation of the Convention (1 January–31 December 1999).* The report reveals that between the entry into force of the Convention and the end of 1999, OPCW inspectors had verified the destruction of 3,353 tonnes of unitary chemical weapons (including the nerve agents VX and GB and the blister agent HD) contained in bulk containers, as well as 430,389 items of unitary munitions, 4 tonnes of key binary components, 461 tonnes of other components and 522,232 items of binary munitions and canisters. In addition, 62 tonnes of Category 2 chemical weapons (namely thiodiglycol and chloroethanol) and a total of 78,249 items of Category 3 chemical weapons (unfilled munitions, devices and specifically designed equipment) were also destroyed before 31 December 1999. Destruction activities continued in the United States and began in two unidentified states parties, in one case involving Category 2 chemical weapons and in the other involving Category 1 and 3 chemical weapons.

Six states parties had made declarations of old chemical weapons (OCW) on their territory (Belgium, France, Germany, Italy, Japan and the UK), China, Italy and Panama had declared abandoned chemical weapons (ACW) on their territory, and Japan had declared ACW in China. Of the four states parties making declarations of OCW produced between 1925 and 1946 (Germany, Italy, Japan and the UK), only Italy and the UK had provided to the OPCW, on a voluntary basis, their general plans for the destruction of such weapons, as well as detailed annual plans for and reports on destruction.

A glossy version of the report, with photographs and a foreword by Director-General José Bustani, is published by the Secretariat towards the end of July as *OPCW Annual Report 1999*.

17 May In the UK House of Commons, the Secretary of State for International Development, Clare Short, states that her department (DFID) is supporting the work in Halabja of Professor Christine Gosden of Liverpool University to develop a prioritized programme, in conjunction with the universities in northern Iraq and the recently established post-graduate school in Halabja [see 2–5 Aug 99]. She writes: "This will benefit the victims of chemical and biological weapon attacks on the Kurds, principally at Halabja in northern Iraq. The programme will include developing proposals for palliative care, curative treatment, and neutralising environmental contamination." DFID will consider more substantive assistance on the basis of proposals received. Secretary Short also states that other donors, including Switzerland, Sweden, Finland, Norway, Italy and the Vatican, are showing an interest in providing humanitarian and other support.

17 May In London, the Chief of Defence Intelligence, Vice Admiral Sir Alan West, says: "We believe that Iraq has the capacity immediately to produce mustard gas, and nerve agent within a few weeks. We believe Baghdad can regenerate biological warfare capability within months." On nuclear weapons, however, he says: "We believe that the disruption caused by the UN inspectors means it will take many years to regenerate the programme".

18 May The OPCW Secretariat announces that it is replacing its Internship Programme with an Associate Programme. A 13-week pilot course for up to 12 participants will begin on 18 September and end on 15 December. As well as training sessions at the OPCW headquarters in The Hague, the pilot course will also involve industrial training at a UK university and industrial assignments at chemical plants in Europe. The declared intentions of the programme are: "to enhance national capacities by training personnel from National Authorities as well as from industry, and to increase the suitability of chemists and chemical engineers from developing countries and countries in transition for employment within the Secretariat (e.g., in the Inspectorate Division) in a technical capacity". Applications from those countries currently underrepresented in the staff of the OPCW Secretariat are especially welcomed.

18 May In London, the Gulf War Research Unit at King's College releases findings from a continuing research project funded by the US Defense Department. The findings support BW vaccines as a possible cause of ill health among Gulf War veterans, but only for veterans who had received multiple vaccinations in the field, not among those who had received theirs prior to deployment to the Gulf. The findings are published two days later in the *British Medical Journal*.

18 May In the United Kingdom, the Ministry of Defence publishes the review it had promised in 1997 of the activities of the 1 Field Laboratory Unit (FLU) and of possible biological warfare agent detections during the Gulf War. The review concludes that UK troops were not exposed to BW agents during the war, although it does mention one occasion on which a biological substance had been detected and samples returned to the UK for testing.

Besides much detail on the activities of 1 FLU, the report provides background on the UK's assessment of the threat from Iraqi biological weapons in the 1990/1991 period. The earliest such threat assessment from the Defence Intelligence Staff, in August 1990, had stated that Iraq probably had available anthrax spores and botulinum toxin, albeit in unknown quantity, and that the military applications of several other BW agents had been studied. By September 1990, Iraq was considered to have developed three types of botulinum toxin and was known to possess a fourth type which could also have been weaponized. By November, plague bacteria had been added to the BW threat list and by December the UK had assessed that Iraq had studied or received information about a dozen agents in addition to anthrax, plague and botulinum toxin, including mycotoxins. No specific knowledge existed about the BW-agent delivery systems, doctrine or tactics that Iraq might use.

18–19 May In Lyon-Bron, at the Ecole du Service de Santé des Armées (ESSA), there is an international colloquium on emerging diseases and bioterrorism, *Le risque biologique*, organised by the Rhône-Alpes delegation of the French High Committee for Civil Defence, the Marcel Mérieux Foundation and ESSA (the School of the French Military Health Service).

Among the speakers from outside France are Ken Alibek [see 6 Jan 00] of Hadron Inc, with a presentation on bioterrorism, and officials from the World Health Organization, Guénaël Rodier (on new emerging diseases) and David Heymann. Other activities include a presentation of NBC defence and first responders' equipment and a visit to the Merieux BL-4 laboratory at Gerland [see 5 Mar 99].

18–20 May In Piestany, Slovakia, there is a NATO Advanced Research Workshop on *Maximizing the Security Benefits from International Cooperation in Microbiology and Biotechnology*. The directors of the workshop are Graham Pearson of the United Kingdom and Cyril Klement of the Slovakian State Institute of Public Health. The workshop is attended by 40 individuals, including representatives of the European Commission, the ICGEB and the OPCW, plus the Harvard Sussex Program.

19 May Angolan opposition leader, Jonas Savimbi of UNITA, has given an interview to the Portuguese newspaper *Folha 8* that is now excerpted on the Web. He states that he continues to live in Angola. He alleges that Angolan government forces have used "chemical and other weapons" on the towns of Bailundo, Andulo [see 4 Jan] and Mungo, adding: "That is a crime, but the world has kept silent".

19 May The OPCW Technical Secretariat now has 491 position-holders for its 507 authorized fixed-term posts. Of the position-holders, 333 are in the professional and higher category and 158 in the general service category. Including persons on short-term and temporary-assistance contracts, the total number of staff at OPCW headquarters is about 550, of 64 different nationalities.

20 May In Russia, ITAR-TASS reports that special units of the Interior Ministry have found an arms depot "complete with nerve gas" in the Chechen village of Avtury. According to the ministry's regional press centre, the depot contained 12 aircraft bombs, five artillery shells and other ammunition.

20–30 May In the United States, there is the largest-ever trial of the country's ability to respond to chemical or biological terrorism, Exercise TOPOFF. Mandated by the Congress, which appropriated $3.5 million for the exercise, and organised by the Department of Justice and the Federal Emergency Management Agency, it involves thousands of federal, state and local officials, testing their responses to simulated agent releases: a chemical release in Portsmouth, New Hampshire, and a biological attack in Denver, Colorado, both coinciding with a separate, but related, exercise in the Washington, DC, area.

22 May President Putin submits to the State Duma a federal bill "On the Annulment of Reservations in the Protocol on the Prohibition of Wartime Uses of Asphyxiating, Poisonous and Other Like Gases and Bacteriological Weapons of June 17, 1925". A presidential press service report says that, in view of Russia's membership in the BWC and CWC, the withdrawal of the country's reservations to the Geneva Protocol "will not affect in any way the amount of the Russian Federation's international commitments in this domain".

22 May In Brussels, NATO officially opens its Weapons of Mass Destruction (WMD) Centre [see 2 Dec 99]. The declared purposes of the new institution are to coordinate NATO activities related to WMD and to intensify consultations on questions of nonproliferation, arms control and disarmament.

22 May In Los Angeles, a symposium on *Bioterrorism Preparedness and Response* takes place on the second day of the 100th General Meeting of the American Society of Microbiology. Subsequent press reporting focuses on the threat of agricultural bioterrorism, quoting statements by Department of Agriculture officials saying that they currently have no money specifically designated for anti-terrorism, and that their request for $200 million for increasing preparedness in the agricultural sector in the 2001 budget had been reduced to $10 million.

22–24 May In Obolensk, the State Research Centre for Applied Microbiology (SRCAM) [see 24 Nov 98] hosts around 200 scientists from 10 countries for an international workshop on *Biological and Ecological Safety* sponsored by the International Science and Technology Center (ISTC) [see 15 Jun 99 and 10 Dec 99]. At the end of the workshop, ISTC and SRCAM announce that SCRAM is to receive $1.2 million funding for two new projects from two contributors to the ISTC Partner Program, namely the US Department of Agriculture and the US Defense Threat Reduction Agency. The DTRA Cooperative Threat Reduction funds will go towards improving security at the facility, while the USDA money will support research into pig diseases. To date, the ISTC has committed over $6 million to funding 34 scientific projects at SRCAM. According to SRCAM general director Nicolai Urakov, "cooperation on ISTC projects provides an outstanding example of the redirection of the scientific center in Obolensk. [...] It has also permitted us to remove the atmosphere of secrecy and mistrust in working with our foreign colleagues. And most importantly, we have demonstrated that the most complex biological and ecological concerns — such as protection from infectious diseases and biological terrorism — can be successfully addressed only through joint efforts by the specialists of different countries".

There is a press conference after the workshop with journalists that include foreign ones who had been given a tour of SRCAM laboratories, including Building No 1, where in Soviet days, when the Obolensk facility was known as Post Box V-8724, some of the most ambitious biological-weapons research ever attempted was reportedly conducted. The Obolensk collection of strains of anthrax and tularemia organisms is described by one reporter as the largest in the world.

22–24 May In The Hague, some 200 people participate in the *Third International Chemical Weapons Demilitarization Conference*. The first day of proceedings is hosted by the OPCW, with the remaining two days hosted by the Dutch Ministry of Foreign Affairs. Co-sponsored as before [see 7–9 Jun 99] by DERA Porton Down and ICF Consulting, the conference and its associated exhibition seek to promote cooperation between governments, organizations, industry and research establishments in order to address and provide technical and practical solutions to the key problems associated with chemdemil. In this last regard, the difficulties currently confronting the Russian programme receive particular attention.

23 May At Harvard University, in the Belfer Center for Science and International Affairs, the Swedish ambassador to the United States and former UNSCOM Executive Chairman Rolf Ekéus, speaks at a special session of the HSP Cambridge

CBW Colloquium. His topic is UNSCOM experience in Iraq. He later speaks to a larger gathering in the Kennedy School of Government.

23 May In the US House of Representatives, the special oversight panel on terrorism of the Armed Services Committee conducts its inaugural hearing. The chairman of the panel, James Saxton, describes the panel's objectives as to understand how terrorism is changing and where the terrorist threat is going, so that policymakers and the public are better informed. This first hearing deals with what Saxton describes as "cutting edge terrorist threats", namely biological, nuclear and cyber terrorism. Testifying on the subject of bioterrorism is Ken Alibek [see 18–19 May], who concludes his testimony by saying that "to protect ourselves from the threat of biological weapons, we must increase our awareness and understanding of the threat, strengthen current international agreements and increase transparency, and most importantly, develop new medical means to render such weapons useless".

23–24 May At UN headquarters in New York, the UNMOVIC College of Commissioners convenes for its first meeting. UNMOVIC Executive Chairman Hans Blix has also invited the participation of observers from IAEA and OPCW. According to a subsequent report to the UN Security Council, the College receives briefings from the Executive Chairman and others on events of the past three months, on the basis of which it "discussed, commented on and made suggestions on the question of possible operational procedures for UNMOVIC, the recruitment and training of personnel and the Joint Unit for Export/Import Monitoring, including the revision of the lists to which the mechanism applies". The IAEA observer describes his agency's activities under Security Council resolution 1284 (1999), and one of the Commissioners briefs on the role of overhead imagery. The College also examines informal guidelines that are to be followed in its work.

24 May In Florence, the North Atlantic Council meets in ministerial session. It issues a communiqué containing the following: "We continue to attach the utmost importance to full implementation of and compliance with international disarmament and non-proliferation regimes. As we celebrate the 25th anniversary of the entry into force of the Biological and Toxin Weapons Convention (BTWC), we continue to regard as a matter of priority the conclusion of negotiations on appropriate measures, including possible verification measures and proposals to strengthen the convention, to be included as appropriate in a legally binding instrument. We reiterate our commitment to efforts to achieve such an instrument as soon as possible before the 5th Review Conference of the BTWC in 2001. We are committed to the universalisation of the Chemical Weapons Convention and its full implementation."

24 May In the US House of Representatives, the National Security, Veterans Affairs and International Relations Subcommittee of the Government Reform Committee holds hearings on the Department of Defense's chemical and biological defence programme (CBDP). Testifying are Kwai Chan of the General Accounting Office's national security and international affairs division and Anna Johnson-Winegar, Deputy Assistant to the Secretary of Defense for Chemical and Biological Defense. Committee chairman Christopher Shays refers to the DoD's annual report on the CBDP, the 1999 version of which had been submitted to Congress earlier in the year. Despite an August 1999 recommendation from the GAO [see 16 Aug 99], the CBDP has not yet completed a Results Act Compliance Performance Plan, which would allow programme performance to be measured in terms of outcomes, rather than activities. Shays also announces that his committee is beginning an examination of the broader force protection effort, including detection, agent identification, warning, individual protection, collective protection and decontamination.

25 May In London and New York, there is publication of a book by former UNSCOM Executive Chairman Richard Butler, part autobiographical but mostly an account of his experiences in UNSCOM. The British edition is called *Saddam Defiant: The Threat of Weapons of Mass Destruction and the Crisis of Global Security*. The American edition is called *The Greatest Threat: Iraq, Weapons of Mass Destruction, and the Crisis of Global Security*. The publication attracts much comment, and interviews given by its author are widely quoted. The primary recommendation of the book for the future is that the permanent members of the UN Security Council should "solemnly declare to the world that they will always act together to remedy any situation identified by a credible report on the violation" of one of the weapons-of-mass-destruction treaties. Such an undertaking by the P5 would mean their forswearing use of the veto in such circumstances.

25 May In the United States, the Special Assistant for Gulf War Illnesses in the Department of Defense, Bernard Rostker, releases three new OSAGWI reports. Two are case narratives. One is a final version of OSAGWI's earlier case narrative on whether Iraq stored chemical weapons at Tallil air base during the Gulf War. The report states that, although Tallil had housed chemical-weapons-equipped planes during the Iran-Iraq war and had an S-shaped bunker of a kind in which Iraq was believed to store chemical and biological weapons, it was unlikely that chemical weapons were stored there during the period of US occupation from 2 March to 7 April 1991.

The second case narrative is an interim update of OSAGWI's investigation into possible chemical warfare agent detections during minefield breaching operations by the 1st and 2nd Marine Divisions. It assesses the presence of CW agent to have been "unlikely".

The third release is an OSAGWI close-out report on the possible use of chemical warfare agents against civilians by Iraq during the immediate aftermath of the Gulf War [see 7 Mar 91 and 7–20 Mar 91]. The investigating team concludes that "we were unable to obtain definitive evidence of Iraq's post-war use of blister agents or any other kind of chemical warfare agent", continuing: "Nor does it appear continued investigation is likely to yield such evidence or shed further light on this issue. With this report, we terminate this investigation but do not dismiss the possibility Iraq used chemical warfare agents against its own people. Rather, this report describes what has been learned and why continued investigation is not likely to yield evidence beneficial to our interest in the unexplained illnesses of Gulf War veterans". The investigation had been prompted by reports from veterans that they had witnessed Iraqi use of blister agents against rebelling Shia civilians, particularly in the vicinity of An Nasiriyah. In the course of the investigation over 100 doctors, medics and nurses had been interviewed, none of whom reported seeing any evidence of exposure to chemical weapons on the many Iraqi refugees they treated. However, the report also includes this from the 82nd Airborne Division's NBC officer: "I think that they (Iraqi government) are using WP [white phosphorus] and CS [tear gas] on the resistance and civilians. I do not believe, at this time, that they are using nerve, blister, or blood agent in this area."

26 May In New York, a lawsuit brought by April Oliver against CNN in the Tailwind case [see 7 May 99] is settled out of court. The terms of the settlement are not disclosed, and CNN offers no comment.

26 May In the US Congress, the General Accounting Office submits a major new report, *Weapons of Mass Destruction: DOD's Actions to Combat Weapons Use Should Be More Integrated and Focused*. Begun in April 1999, the report describes how the Defense Department has tried to make the nuclear and CBW weapons threat a matter of routine consideration within its organization, activities and functions. It identifies ways in which these actions might be improved in order better to implement the Defense Counterproliferation Initiative [see 7 Dec 93]. And it examines the actions of the interagency Counterproliferation Program Review Committee in coordinating the research and development programmes of the Defense and Energy Departments and the US intelligence community so as to identify and eliminate unnecessary duplication.

29 May In Japan, under the auspices of the Health and Welfare Ministry, a study-group of experts on infectious disease and large-scale disasters holds its inaugural meeting to consider preparedness against bioterrorism. One of its tasks is to draft an action plan in readiness for the G8 summit that is scheduled for 21–23 July in Okinawa. The Health and Welfare Ministry will also establish an information network of experts on infectious disease and will collect vaccines and medicines for 72 types of disease from research institutes and pharmaceutical companies.

29 May The OPCW Technical Secretariat has by now started to conduct or has completed a total of 739 routine inspections at 352 sites on the territory of 35 CWC states-parties: 14 inspections at Abandoned Chemical Weapons sites; 27 at Old Chemical Weapons sites; 109 at Chemical Weapons Storage Facilities; 169 at Chemical Weapons Destruction Facilities; 171 at Chemical Weapons Production Facilities; 66 at Schedule 1 facilities; 122 at Schedule 2 plant sites; 59 to Schedule 3 plant sites; 1 at a DOC plant site; and one other [see 15 Jul 99 Iraq]. OPCW inspectors have spent a total of 46,159 person-days on these missions.

30 May–2 June In Norfolk, Virginia, the US Defense Threat Reduction Agency holds its 9th Annual International Conference on *Controlling Arms: Globalization of the Security Environment*. Discussion at the conference concentrates on the proliferation of long-range ballistic missiles, the challenges to the NPT and BWC regimes, the ongoing revolution in technology, and the emergence of NGOs as a factor in the decision-making process. The presentations include a rather detailed account of the former Soviet bioweapons programme given by Ken Alibek as part of his talk on "Biological Weapons Protection". The conference is attended by around 400 people. The proceedings are to be published shortly.

31 May In Moscow, deputies of the defence and armed forces committee of the lower house of the French parliament, Pierre Lellouche and Michel Chauveau, tell reporters that France has offered Russia assistance in the elimination of chemical and biological weapons. In addition, Russia has proposed establishing a working group between the two countries at the level of parliamentary foreign affairs and defence committees, which would deal with non-proliferation issues.

31 May On US television, *NBC Nightly News* reports from Russia and Kazakhstan about the former Soviet bioweapons programme and about US efforts to dismantle it through Cooperative Threat Reduction. Anchorman Tom Brokaw states that President Clinton is expected to raise the issue of biological weapons with President Putin during their impending summit meeting in Moscow.

Next day, at a Defense Department background briefing, an unidentified senior Defense official tell reporters that the Russian BW programme is not on the summit agenda. The official continues: "There are, of course, residual concerns in the US intelligence community that some Russian offensive BW program survives. I don't think we can say anything conclusive as to whether that is true or not. ... Over the past 10 years, we have had increasing degrees of access to the civilian facilities and what's known as Biopreparat, through the Cooperative Threat Reduction Program. With Americans on the ground in those facilities, the odds of there being secret biological warfare, offensive biological warfare programs at those facilities goes down dramatically to zero, I would say. We've had access to the so-called Bio Level Four containment facilities at those civilian Biopreparat complexes. We are working with the civilian Biopreparat people in many areas to develop transparent commercial pharmaceutical and other medical research at those facilities to provide continued employment for the scientists." Returning later to the possibility of a residual Russian bioweapons programme, the official says: "I could not provide you proof-positive that it did not exist. But it would be very hard to prove the absence of this program. We don't have full access, obviously, to all biological facilities in Russia, in particular to the military facilities that deal with biological research. Is there an offensive BW program there? I can't tell you that. Is intelligence compelling in any way? We don't comment on intelligence, but there is nothing that is particularly compelling. If there was, it would be a top-of-the-line issue."

31 May In Washington, the Federation of American Scientists (FAS) and the Pharmaceutical Research and Manufacturers of America (PhRMA) issue a joint statement on the BWC protocol. The statement includes this on the positions of FAS and PhRMA: "Both [PhRMA] and [FAS] support declarations and challenge investigations as elements of an effective Protocol, although the two groups disagree on some details of these Protocol elements. We also disagree on the value of non challenge visits, which include proposed transparency and declaration clarification visits. FAS believes that these visits are essential for an effective protocol; industry however does not believe their value overrides their risk to Confidential Business Information and facility reputations. We agree, however, that managed access should apply to any and all on-site activities". The statement goes on to propose that industry's fears concerning the possible loss of confidential business information be dealt with through the inclusion of the following key points in the US implementing legislation: "The rules for, rights under, limits of, and obligations under managed access should be clearly defined in the Protocol and supported in the implementing legislation; site managers should have the right to make managed access decisions during on-site activities at non-governmental facilities; owners of the facility should participate in the preparation and review of US declarations covering them, and both the US government and the facility should approve the declaration before submission [...]; industry and other relevant institutions should assist the US government in developing criteria for evaluating nominated inspectors, and the government should solicit and consider

industry concerns when evaluating candidates [...]; we propose that the definition of confidential information in the Protocol and in US implementing legislation should parallel standard industry protections and exceptions for information already in the public domain".

June In the European Parliament, a major study on *Crowd Control Technologies* is submitted by The Omega Foundation (Manchester, UK) as a working document for the Scientific and Technological Options Assessment Panel. The study examines the biomedical effects, and the social and political impacts, of currently available crowd-control weapons in Europe, among them weapons based on toxic chemicals; and it analyses worldwide trends and developments, including the implications for Europe of a second generation of "non lethal weapons". Its Technical Annex presents a large volume of information on this new generation of weapons and on the companies that manufacture or trade in them, together with a country-by-country worldwide review of their actual use and consequences therefrom. The report warns against the adoption of ever more powerful crowd control weapons as 'technical fixes'. It suggests that their use should be limited, and it sets out a number of options for making the adoption and use of the weapons more democratically accountable.

1 June In China, authorities in Harbin are planning to apply to UNESCO to have the former Japanese biological warfare facility at Pingfan declared a World Heritage site, so it is reported in a Hong Kong newspaper. Harbin has also applied to the national government to include the former Unit 731 facility for national historical relic protection. Beijing is expected to grant approval by July or August. Ongoing repair and maintenance work at the site is expected to cost Yuan 200 million (US $23.1 million), funded by local and national government as well as by public donation.

1 June UN Secretary-General Kofi Annan transmits UNMOVIC's first quarterly report to the UN Security Council. The report covers the period from 1 March to 31 May. In his note, the Secretary-General says "in order for UNMOVIC to become operational, it is essential for Iraq to start cooperating with the Commission". The report summarises the first meeting of the college of commissioners [see 23–24 May] and UNMOVIC's progress in recruiting staff and arranging for premises in New York and Bahrain. It also reports that a training programme has been drawn up for recruited staff which includes historical, legal, administrative and political issues related to weapons inspections and monitoring activities in Iraq, as well as the historical and cultural background of Iraq. The first training course is expected to begin in July and to last for four weeks.

2 June In Pakistan, the Rawalpindi *Jang* reports that Pakistan has informed the United Nations that the average number of civilians killed and wounded along the Line of Control by Indian shelling was double the number five years ago. The newspaper says, further, that over the last few years India has also used chemical weapons against Pakistani forces in Lipa valley and Siachen glacier.

4 June In Australia, intelligence sources are said by *Australian Business Intelligence* to have confirmed the purchase in an unidentified country, once part of the USSR, of anthrax and plague bacteria by a southeast-Asian terrorist group that has been linked to Osama bin Laden.

4 June In Moscow, a joint statement on *Principles of Strategic Stability* is issued from the Clinton–Putin summit. It records that, among other things, the two presidents agree that "the international community faces a dangerous and growing threat of proliferation of weapons of mass destruction and their means of delivery, including missiles and missile technologies, and stress their desire to reverse that process, including through existing and possible new international legal mechanisms". Further, they "agree that this new threat represents a potentially significant change in the strategic situation and international security environment".

4 June In Russia, the Defence Ministry's Virological Centre is once again featured on television [see 20 Mar 99]. The programme, on Ren TV, focuses on research into the Ebola virus. The director of the centre, Major General Aleksandr Makhlay, is questioned about the work carried out there: "What type of infections are we working on? On haemorrhagic fevers which belong to the most pathogenic group, including Marburg fever, Ebola fever, Lassa fever, Bolivian haemorrhagic fever. Although they are not endemic in our country, it is still possible for them to be brought into our country. On the other hand, I would like to explain why we are working on them — because, generally speaking, they belong to the list of agents which I repeat — could be used for unseemly ends." Doctor of Medical Science Victor Mikhaylov describes a situation in May 1995 in which a Russian arrived in Staryy Oskol from Zaire suffering from an acute fever. Initially, no precautions were taken and the patient was put in a public ward. When the fact that he had been in Zaire during an Ebola outbreak was discovered, specialists were called in, including those from the Virology Centre. Dr Mikhaylov continues: "[T]he symptoms of the disease turned out to be identical to the symptoms of Ebola fever. Doctors specializing in the handling of epidemics and specialists from the Virological Centre were mobilized. Fortunately, the pilot from Zaire turned out to be suffering from an exotic form of African malaria."

Addressing the way in which facilities were destroyed and allowed to fall into disrepair, General Makhlay says: "Research on viruses in our country suffered irreparable damage. I don't think the USA would have destroyed such production capacities, such technical equipment, so thoughtlessly after 1972 or 1975. This represents a huge amount of state money, people's money. All this money was thrown away. Subsequently, because of the changed situation in the country, all this became unaffordable. In practice, the existence of this unique building — which could be very useful indeed — has now been placed in doubt."

The programme also features what Mikhaylov describes as "the only highly effective preparation for emergency prophylactic treatment of Ebola fever". He goes on to say that it is immunoglobulin made from equine blood serum, which has allowed scientists experimentally to cure all 100 per cent of their diseased laboratory animals. The immunoglobulin has been passed to the WHO.

5 June In Yemen, the parliament approves the CWC following a discussion of the treaty and a report submitted by the Defence, Foreign Affairs and Security Committee and the Expatriates' Affairs Committee. The House of Representatives also issues a statement calling for the end to the "unjust embargo" on Iraq.

5 June In Iraq, an opposition group, the Free Fighters Command, has attacked a secret arms cache in the Diyala region and seized from it "a chemical weapon that was hidden

inside containers kept in fortified shelters", according to a statement by the group's official spokesman, Major Ali al-Askari, reported in the Amman *Al-Hadath*. Major al-Askari is further quoted by the Jordanian weekly as saying that this booty is being held in a safe place inside Iraq, and that "Sigma Aldrich Group" had been the source of the containers.

5 June In Moscow, at a seminar on Russian strategic issues organized by the journal *LiMes*, the director of the Center for Policy Studies in Russia (the PIR Center), Vladimir Orlov, states that Russia sees in chemical and biological weapons an emerging threat greater than that in nuclear weapons. He states that President Putin believes the main threat comes from terrorist groups and from "proliferator states". Russia, much more than America, he says, offers a "window of vulnerability" to chemical or biological attack.

5 June In the United States, the National Commission on Terrorism [see 9 Sep 98], a 10-member panel that had begun work six months previously under the chairmanship of L Paul Bremer III, publishes its report, *Countering the Changing Threat of International Terrorism*. One of its broad conclusions is summarized as follows in the Executive Summary: "A terrorist attack involving biological agents, deadly chemicals, or nuclear or radiological material, even if it succeeds only partially, could profoundly affect the entire nation. The government must do more to prepare for such an event." How to do this is the subject of detailed recommendations.

One set of recommendations is this: "The Secretary of Health and Human Services should strengthen physical security standards applicable to the storage, creation and transport of pathogens in research laboratories and other certified facilities in order to protect against theft or diversion. These standards should be as rigorous as the physical protection and security measures applicable to critical nuclear materials. The Congress should: Make possession of designated critical pathogens illegal for anyone who is not properly certified. Control domestic sale and transfer of equipment critical to the development or use of biological agents by certifying legitimate users of critical equipment and prohibiting sales of such equipment to non-certified entities. Require tagging of critical equipment to enable law enforcement to identify its location. The Secretary of Health and Human Services, working with the Department of State, should develop an international monitoring program to provide early warning of infectious disease outbreaks and possible terrorist experimentation with biological substances."

Most controversial, however, is the report's recommendation that the President should request the National Security Adviser, Secretary of Defense and Attorney General to develop and adopt contingency plans allowing for the transfer of lead federal agency authority to the Department of Defense in "extraordinary circumstances, when a catastrophe is beyond the capabilities of local, state and other federal agencies, or is directly related to an armed conflict overseas". Currently, the FBI and FEMA are designated as lead agencies in a terrorism crisis and DoD's role is restricted to providing support. Considering DoD's ability to command and control vast resources in dangerous and unstructured situations, the report suggests that the President should also have the option to designate the DoD as a lead federal agency.

Later, on 8 June, Chairman Bremer appears before the Senate Select Committee on Intelligence. In his prepared testimony he says: "What if a release of radioactive material made 10 miles of Chicago's waterfront uninhabitable for 50 years? What if a biological attack infected passengers at Dallas–Fort Worth Airport with a contagious disease? It could happen. Five of the seven countries the US government considers terror-supporting states [see 1 May] are working on such weapons and we know some terrorist groups are seeking so-called weapons of mass destruction".

On 15 June, Chairman Bremer testifies before the Senate Foreign Relations Committee. Questioned on the commission's recommendations for regulating biological pathogens and critical equipment, he responds as follows: "It is now currently not against the law to possess biological pathogens. We are suggesting that unless you have a reason to own those biological pathogens, it should be illegal. In effect, the controls that are in effect on biological agents are considerably less than those we've developed over the last 50 years for nuclear agents. And we are suggesting they should be made the same. As for how to go about that, it's a question of drafting the legislation. In terms of the taggant question, which is a sensitive one, [...] what we are suggesting is tagging equipment. And there are — for example, it's not as easy to make a biological weapon as sometimes you get the impression. You need specialized fermentation equipment. You need centrifugal separators. You need things called 'cross-flow filtration' equipment. You need aerosol inhalation chambers. There is very specialized equipment which, incidentally, is now controlled for export. These kinds of things are already controlled in the United States for export, but the domestic sale of these kinds of equipment is not controlled, and we suggest that Congress should take a look at controlling those kinds of things which would be needed to weaponized biological weapons."

Commentary on the commission report ranges from endorsement of its advocacy of preparing for the worst in a dangerous world to portrayal as yet another instance of bioterrorism being hyped by undisinterested parties.

6 June In Tokyo, Yoshihiro Inoue [see 23 Apr 97], the former intelligence chief of the Aum Shinrikyo cult, is sentenced to life imprisonment for his role in the sarin attack on the Tokyo subway five years previously [see 20 Mar 95]. Prosecutors had pressed for the death penalty, but Judge Hiromichi Inoue handed down a life sentence as Yoshihiro Inoue was not directly involved in the gas attack, although the judge acknowledged that without Inoue's logistical support and coordination the attack would not have gone as planned. The life sentence also covered other offences, including the lynching of Aum follower Kotaro Ochida in 1994, the murder, using VX, of Tadahito Hamaguchi [see 4 Dec 95], and the attempted murders of Noburo Mizuno in 1994 and of Hiroyuki Nagaoka in 1995.

Later in the month, on 29 June, a death sentence is passed — the second thus far among the Aum defendants — on Yasuo Hayashi, who had been one of those who had actually released sarin in a subway train and had also been involved in earlier attacks.

6 June In France, at the Court of Appeal in Bordeaux, a French Gulf war veteran, Hervé Desplat, pursues his case for a disability pension on account of a 60 percent pulmonary incapacity that he attributes to his war service. A pensions tribunal had rejected his initial request in 1997 for lack of formal proof of cause and effect. His is the first such case to posit a manifestation of "Gulf War syndrome" among French veterans, a fact that his advocate attributes to "the tradition of silence that reigns in France".

6 June The US State Department says that China has agreed to start a formal dialogue on non-proliferation with the United States. Details are still being worked out, but talks seem likely to begin in July.

8 June The OPCW Secretariat issues a questionnaire to CWC states parties in order to gain an overall view of how states parties are regulating scheduled chemicals and their precursors. The results of the survey are to be distributed to all states parties and discussed at a workshop to be held in Spain later in the year. The questionnaire is limited to scheduled chemicals and unscheduled discrete organic chemicals. For those (numerous) states parties that are not yet in compliance with their obligation to enact CWC implementing legislation, the questionnaire asks what the "main impediments" have been. Replies are due in by 31 July.

[*Note*: The questionnaire makes no inquiry about those other unscheduled toxic chemicals and precursors for which CWC Article VI.2 requires each state party to "adopt the necessary measures to ensure that [they] are only developed, produced, otherwise acquired, retained, transferred or used within its territory or in any other place under its jurisdiction or control for purposes not prohibited under this Convention". Among these many chemicals are the ten inorganic toxic-chemical precursors that are specified on the export-control lists of the Australia Group but not in the CWC schedules, namely KF, HF, KCN, KHF_2, NH_4HF_2, $NaHF_2$, NaF, NaCN, P_2S_5 and Na_2S.]

9 June The Canadian Security Intelligence Service (CSIS) releases a report on biological weapons proliferation. The report lists the following ten "countries of greatest concern from a proliferation perspective": Egypt, India, Iran, Iraq, Israel, Libya, North Korea, Pakistan, Syria and Taiwan. A conclusion presented in the report is: "In the near term, the concern is that a larger number of states will succeed in developing and stockpiling the 'classical' forms of BW agent; in the longer term, however, there is fear of the spread of genetically-engineered agents that may be more effective militarily, more difficult to detect, and not susceptible to standard vaccines and antibiotics". The report also concludes that Canada's highly developed pharmaceutical and biotechnology industries, and also its "advanced educational resources", could be a source of expertise, materials and technology for states pursuing a bioweapons programme.

11 June In Afghanistan, the Bakhtar Information Agency reports that Russia has supplied chemical weapons to forces opposed to the Taleban regime. According to the report, the weapons were delivered to Panjsher from an airport in Tajikistan and placed in special depots.

12 June In New York, UNMOVIC Executive Chairman Hans Blix gives a long interview to *Arms Control Today* in which he describes his philosophy and projections for the implementation of Security Council resolution 1284 (1999) in Iraq. He lays stress on Iraq doing what the resolution mandates: cooperating. He cites the experience of the IAEA when the South African government asked it to verify that it had done away with its nuclear weapons. Despite Iraq's continuing rejection of UNMOVIC, he remains optimistic: "I am sure that they are looking around the horizon. They have one very firm view now, but the waters under this ship will be moving, not standing still." As to staffing, he has favoured some transfers from UNSCOM, and says: "there should be both innovation [from "fresh minds"] and institutional memory". On the matter of intelligence data, he expresses gratitude to the United States for "continuing to show us overhead pictures from satellites" but adds: "We have no intelligence data, and I don't want to have any until we have our own intelligence expert on board". He expands on this later in the interview: "I have publicly taken the view that intelligence is valuable. Defectors do not come knocking at UNMOVIC headquarters. They go to governments, and it is valuable to have much of that. It can give you ideas as to where it might be useful to go or about questions that you should ask. But we also know that there is almost as much disinformation around the world as there is valid information, and I would like to have a professional in this area who would be able to assess with a critical eye what is coming in [...] we have to be able to give assurances to those who supply us with intelligence that this is the only person who gets it, and that the providers have to decide how much further it will go."

12 June In the United States, new research by marketing consultants Frost & Sullivan predicts that the global market for CBW-agent detectors, which generated $264.4 million in 1999, will nearly double by 2006. Details are set out in Frost & Sullivan's just-published *World Chemical and Biological Warfare Agent Detector Markets* (price: $3,450). Best placed to benefit, the report says, will be those companies that are leaders in both production and research and development.

13–15 June At the Helsinki University of Technology at Espoo, a symposium on *Nuclear, Biological and Chemical Threats in the 21st Century* is organised by the section for NBC protection, rescue and civil defence of the Association of Finnish Chemical Societies. The symposium attracts 255 participants from 29 countries. The presentations mainly address technical aspects but they also include ones from the OPCW and other implementers of the CWC, as well as ones about the BWC Protocol negotiation.

A rather detailed but undocumented account of the former Soviet bioweapons programme is presented by Dr Lev Fedorov of the Union for Chemical Safety (Russia). He observes that the current Criminal Code of Russia prohibits neither bioweapons research, nor bioweapons storage, nor the maintenance of bioweapons production facilities.

13–15 June In Washington, the Department of State hosts a conference on counterterrorism focusing on the transnational threat in Central Asia. In an interview with *Nezavisimaya Gazeta* the former head of the Russian Interior Ministry, Anatoly Kulikov, says that he does not rule out the possibility of international terrorists acquiring weapons of mass destruction from CIS countries.

14 June In London, the British–Sudan Public Affairs Council publishes a press release criticizing allegations made by Baroness Cox in the House of Lords that the Sudanese government had been using chemical weapons on its own people in the south of the country. Attached to the press release is a letter dated 5 June from the UK Minister of State for Defence Procurement, Baroness Symons, to Baroness Cox, transmitting the results of sample analysis undertaken by CBD Porton Down. The samples analysed, 17 in all ("water, soil and shrapnel collected from three sites"), had been gathered by journalist Damien Lewis [see 31 Dec 99]. As thus published, the Minister's letter states: "No intact CW agents, their associated environmental degradation products, or riot-control agents were identified in any of the samples. Low levels of arsenic were detected in 15 of the samples, but, again, only at

levels well below expected natural limits for environmental samples. Conventional TNT explosive was present in eight of the samples. ... CBD concluded from its analysis that these samples bore no evidence of the CW agents for which they had been tested." [*Note*: The letter does not identify the chemicals for which CBD Porton Down had tested. In fact the only CW agents that Porton looked for were four blister gases (mustard, nitrogen mustard, Q and T), four nerve gases (tabun, sarin, soman and VX), one psychochemical (BZ), and six sensory irritants (chloropicrin, SK, CA, CN, CS and CR). Besides arsenic, the only agent-degradation products sought were ones of nerve gases and sulphur mustards. It is not clear from the letter whether the Minister appreciated just how narrow the search for traces of CW agent in the samples had been.] The letter goes on to refer to two other negative findings from analyses of Sudanese samples, one in the United States and the other, done on the Damien Lewis samples, in Finland. "Given the consistency of results from these three independent sets of analysis", the Minister writes, "I believe we must conclude that there is no evidence to substantiate the allegations that chemical weapons were used in these incidents in the Sudan."

The US analysis referred to by the Minister has not been published. Summary findings from the Finnish analysis, done by VERIFIN, were released on 20 June. In contrast to the Porton effort, the VERIFIN analysis — using GC/NPD, GC-EI/MS and LC-APCI/MS — extended to all chemicals on the CWC schedules as well as to other chemicals known to have been used as riot-control or CW agents. None were found. But, as with the Porton analysis, traces of TNT were identified. This was so for all the soil samples and one water sample. VERIFIN sought also to quantify the TNT, its estimates of the concentration of TNT in the different samples ranging from 6 to 450,000 mg/kg. The Finnish analysts observe in their summary report: "The health hazards described in literature for TNT and its degradation products match quite well with the symptoms described by the victims". The report had noted, moreover, that specific laboratory tests had been performed "to seek clarification to the different colours found in the samples". Like the symptoms, the colours also are explicable in terms of the properties of TNT.

14 June In the US Senate, bipartisan draft legislation to strengthen protection against threats to public health, *The Public Health Threats and Emergencies Act of 2000* (S 2731), is introduced by Senators Bill Frist and Edward Kennedy. The bill is directed against what Senator Kennedy describes as the "Three Horsemen of a modern day Apocalypse", namely new and resurgent infectious diseases, "superbugs" resistant to antibiotics, and terrorist attacks with biological weapons. Senator Kennedy says: "We are a nation at risk. Biological weapons are the massive new threats of the twenty-first century." The bill proposes the establishment of a joint task force within the Department of Health and Human Services (DHHS) and the Department of Defense, and the creation of a joint interdepartmental working group involving DHHS, FEMA and the Attorney General.

14 June In Florida, a retired US Army intelligence official, George Trofimoff, is arrested on charges of having sold information to the USSR and then Russia during 1969–94, a period when he had served as chief of a US Army unit in Germany responsible for interviewing defectors. His indictment states that his unit had access to reports on defectors' interviews, documents describing intelligence objectives, assessments of Soviet and Warsaw Pact forces, and documents on the CBW threat posed by the Warsaw Pact.

15 June The Canadian Security Intelligence Service (CSIS) publishes the ninth edition of its annual Public Report, which includes the following observation: "The security and intelligence community is increasingly challenged by emerging terrorist threats. These include the potential use of nuclear, chemical, biological or radiological materials by a terrorist group, cult or individual. Although it is widely believed that a mass-casualty attack of this kind is unlikely in Canada, the potential consequences are so significant that the Service must devote resources to the investigation of such threats. In light of the potential consequences of a mass-casualty attack, Canada and its allies continue to explore and develop inter-agency emergency responses to this threat."

16 June In the OPCW Technical Secretariat, Director-General José Bustani appoints his Special Adviser, Ronald Manley of the United Kingdom, to succeed Jean-Louis Rolland of France as Director of the Verification Division. The Director-General also appoints Mikhail Berdennikov of Russia, formerly Assistant to the Deputy Director-General, to be his new Special Adviser.

17 June The 75th anniversary of the Geneva Protocol is marked by statements from Presidents Clinton and Putin. President Clinton encourages those states that have not yet done so to join the Geneva Protocol, the BWC and the CWC, and also urges all participants in the BWC Ad Hoc Group negotiations "to work toward the earliest possible conclusion of a BWC Protocol that will further strengthen international security". President Putin emphasizes Russia's compliance with both the Geneva Protocol and the BWC, and notes Russia's recent decision to withdraw its reservations to the Geneva Protocol [see 22 May]. His statement continues: "In turn, we are counting on the scrupulous observance of these agreements by the other states parties as well. As a depositary country, Russia has constantly advocated the establishment of effective arrangements for monitoring compliance with the Biological Weapons Convention and is taking an active part in the negotiations to develop a protocol to strengthen and improve the Convention."

19 June The Federal Republic of Yugoslavia (Serbia & Montenegro) should by today have submitted to the OPCW its initial declaration under the Chemical Weapons Convention, including information on any past chemical-weapons programmes. It is subsequently reported from the OPCW Secretariat that such a declaration had indeed been received during June.

19 June In the UK, the Wiltshire Constabulary, which is investigating CBD Porton Down, has asked the Home Office for emergency funding to meet the rising cost of the inquiry. In the House of Commons, the Home Office reveals that the investigation has thus far cost £335,000 and is engaging 16 police officers and five civilians. Also revealed is the fact that around 700 people have expressed interest or concern in the events leading to the inquiry and that the police have been in touch with about 300 people in connection with the inquiry. The inquiry is now expected to last until the end of the year.

19 June The US State Department announces that it is abandoning the term "rogue states" in favour of "states of concern". Departmental spokesman Richard Boucher explains

the change thus: "What we see now is a certain evolution, different ways in different places. Some places that were described that way have embarked upon more democratic internal life; others have been willing to address some of the issues that are of primary concern to the United States; others have addressed partially issues like terrorism but not completed what the UN, in the example of Libya, has asked them to do in terms of cooperation with the trial". He goes on to say that the seven former "rogue states" (Cuba, Iran, Iraq, Libya, North Korea, Sudan and Syria) are now "states of concern", but that the US wants to avoid categorizing other states.

19–20 June The European Council meets in Feira, Portugal. Its actions include adoption of a *Common Strategy on the Mediterranean Region*. Among the provisions of the document is the statement that the European Union will "promote the signature and ratification by Mediterranean Partners of all non-proliferation instruments, including the NPT, CWC, BWC and CTBT" and will "pursue a mutually and effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems".

The Council receives a report on implementation of the *Common Strategy on Russia* [see 3–4 Jun 99 and 17 Dec 99], which states: "A tangible result of the Common Strategy so far has been the Joint Action in December 1999 on establishing an EU cooperation programme for non-proliferation and disarmament in Russia. Implementation of this is already underway. The Commission is setting up an expert team in Brussels and in Moscow to manage the programme and implement the projects in close collaboration with Member States and the competent Russian authorities."

19–23 June In Missouri, at Fort Leonard Wood, the US Army Chemical School joins with the National Defense Industrial Association in convening the 17th Worldwide Chemical Conference and Exhibition. The conference focuses on protection against nuclear, chemical and biological weapons in all types of military operation and on domestic preparedness.

19–27 June In Ypenburg, at the Netherlands Defence College, another advanced course for personnel involved in implementation of the CWC is given by the OPCW Technical Secretariat [see 17–25 Jan].

20 June In South Korea, a Defence Ministry official tells reporters that the government is considering a proposal whereby both Koreas would, as a follow-up to the recent North–South summit in Pyongyang, scrap or reduce their holdings of chemical weapons [see 8 May]. South Korea intends to use the forthcoming meeting of the ASEAN Regional Forum to encourage the North to join the CWC.

20 June In Mozambique, the Council of Ministers approves a resolution on joining the CWC.

20 June Spain received chemical weapons from Italy during January to October 1937, according to new research reported in the *Corriere della Sera*. The research, by Morten Heiberg of the University of Copenhagen, had been presented at an international seminar in Orte, Italy, on 5 February, the proceedings of which are just now being published as *Pensiero ed azione totalitaria tra le due guerre mondiali* by the Centro Falisco di Studi Storici in Orte. Heiberg's research, based on Italian government archives, reveals that the shipments from Italy to Spain included some 50 tons of mustard gas and 19,500 arsenical projectiles. Italy also sent 310,000 gas masks to Spain. General Franco had requested chemical weapons from both Italy and Germany in August 1936. Based on the documents that he has studied and on contemporary press reporting, Heiberg judges it unlikely that chemical weapons were used during the Spanish Civil War, although accusations were made by both sides. The study details the extent of cooperation between Spain and Italy on chemical weapons and also refers to Italian plans for building a 2 ton/day mustard-gas factory in Spain. The available documents do not indicate whether such a chemical weapons production facility was ever built.

21 June In China, near Nanjung in Jiangsu Province, some 17,600 chemical munitions that had been abandoned by the Japanese Imperial Army were discovered during construction work in February, so Xinhua now reports. The news agency also states that a special team had been sent to Nanjung by the Japanese government to investigate the matter during April and May.

21 June In London, the UK Foreign & Commonwealth Office hosts a session of the HSP London CBW Seminar at which Gradon Carter, now Consultant on Historical Matters to DERA/CBD, presents a paper on "The history of opprobrium at Porton Down".

21 June In the US House of Representatives, the National Security, Veterans' Affairs and International Relations Subcommittee of the Government Reform Committee conducts a further oversight hearing on the Defense Department's Chemical and Biological Defense Program [see 24 May], examining the state of readiness of individual protective equipment. Anticipating the testimony of the Inspector General of the Department, Chairman Christopher Shays says in his opening statement: "Having placed top-level emphasis on the need for the anthrax vaccine, so-called 'medical body armor' against one agent, has the Department ... been as attentive to the need for reliable masks and suits that protect against all toxins and agents? According to the DOD Inspector General, serious problems continue to plague the Pentagon approach to individual protective equipment. In short, DOD may not be able to find enough protective clothing when it's needed on the battlefield, and too many protective masks may not work when they get there. Despite unequivocal findings and recommendations by the IG, these issues have been consigned to years of bureaucratic quibbling and buck passing within DOD." It transpires from a two-year survey reported in the testimony of Deputy Inspector General Donald Mancuso that, of 19,218 masks tested from all military services, 10,322 had a defect "that has the potential to result in mask leakage and may impact the protection of the wearer". Defense Department officials later say that poor cleaning and maintenance, not design or manufacturing defects, had been responsible.

22 June In Luxembourg, the EU Council of Ministers adopts a new regime for the control of exports of dual-use items and technology. This regulation replaces the original EU dual-use goods regime which was established in 1994 and is the culmination of a long drafting process.

The new regulation applies not only to dual-use goods but also to technology transfer via PC, fax and telephone, thus closing a loophole in the 1994 legislation. The regulation creates a general Community licence for certain exports to particular countries (Australia, Canada, Japan, New Zealand, Norway, Switzerland and the USA, as well as EU applicants

and NATO members, namely the Czech Republic, Hungary and Poland) recognising the degree of convergence of member states' licensing policies towards these countries. This general licence should reduce the complexity of the regime and is estimated to cover about 70 per cent of dual-use exports from the EU. However, the most sensitive dual-use goods are excluded from the benefits of the general licence. Unlike the 1994 regime, the new regime is based solely on a Community regulation, rather than requiring a dual legal basis in both the intergovernmental and supranational pillars of the EU. Therefore, the Council also adopts a decision repealing the 1994 joint action. Listed in an annex to the regulation are the dual-use items and technology to which it applies. This includes all chemicals in the CWC schedules and all items on the Australia Group export-control lists.

In addition, the Council adopts another joint action concerning the control of technical assistance related to certain military end-uses. Technical assistance will be subject to controls, either prohibition or an authorization requirement, if it is provided outside the EU by someone established within the EU and is intended for use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or the development, production, maintenance or storage of missiles capable of delivering such weapons. The joint action is to be implemented by member states establishing controls at the national level and also determining sanctions.

22 June In the UK, the CWC National Authority submits its latest annual report to Parliament on implementation of the Chemical Weapons Act 1996. The 20-page report covers the year 1999. During the year, the UK received nine OPCW inspections: four at Schedule 2 industrial sites; three at former chemical weapons production facilities; one at the protective purposes facility at RMCS Shrivenham; and one at CBD Porton Down's facilities for the storage and destruction of old chemical weapons. Other information contained in the report concerns the 1999 UK declarations of industrial data and of information on programmes related to protective purposes. The annual report also provides a breakdown of the costs of CWC compliance in the UK. In addition, information on Operation Abbott [see 27 Oct 99] is included, stating that 1,088 CW munitions were recovered of which 238 had been disposed by the end of 1999. None contained a chemical warfare agent. The remaining 850 munitions should be disposed of within about three years. In the section dealing with the activities of the National Authority Advisory Committee, the report states that the application of the general purpose criterion in the CWC "can be interpreted as placing demands on the National Authority over and above the activities being carried out in support of the OPCW". It goes on to say that "national authorities and their advisers have a responsibility to draw attention to new chemical threats (particularly in the grey area between chemical and biological weapons) and hence to possible breaches in the CWC. National authorities need to consider this situation further".

22 June The US Defense Department is conducting a criminal investigation of BioPort Corp, the manufacturer of the anthrax vaccine, so it is reported in the *Lansing State Journal*. The investigation follows an audit performed in March by the Inspector General at the request of Representative Walter Jones. The investigation is focusing on DoD's funding of the laboratory, particularly the granting of an interest-free $18.7 million cash advance in August 1999 [see 5 Aug 99]. The criminal investigation will scrutinise how this money was spent, especially the $4.9 million which BioPort used for "nonspecific expenses". Money was also spent on renovations, travel and bonuses. If the Inspector General's office decides the case is worth pursuing, it will be handed over to the Department of Justice. BioPort is also still awaiting FDA approval to begin using its new anthrax vaccine production line [see 13 Dec 99].

22–26 June In China, President Khatami of Iran conducts a state visit at the invitation of President Jiang Zemin. The bilateral communiqué issued at the start of the visit includes the statement that the "two sides are committed to a world free from nuclear, biological or chemical weapons". The statement continues: "They stressed that the international regime for eliminating and prohibiting the proliferation of weapons of mass destruction should be permanently and indiscriminately applicable to all regions and countries with no exception. And at the same time both sides took note of the legitimate rights of any country for peaceful uses of nuclear energy, chemical and biological technology in a transparent manner under the supervision of the relevant international organizations."

27 June In Moscow, a homemade bomb containing the CWC Schedule 3 CW agent chloropicrin is discovered in a sauna. The device contains 300 grams of explosive and a package holding the agent. The bomb is defused by experts from the Federal Security Service (FSB). An FSB spokesman declines to speculate on who planted the bomb.

29 June In the US House of Representatives, there is a hearing on *Infectious Diseases* before the Committee on International Relations. Testifying are US Surgeon General David Satcher, the US National Intelligence Officer for Economics and Global Issues, David Gordon, and, via videoconference from Geneva, WHO official David Heymann. The testimony of Dr Gordon draws from a National Intelligence Estimate that he had recently directed, *The Global Infectious Disease Threat and its Implications for the United States*, and includes the following: "The security dimension of the global infectious disease threat manifests in a number of ways. First is the link between infectious diseases and the increasing possibility of a biological warfare or biological terrorism attack against the United States or US equities overseas, as hostile states and terrorist groups exploit the ease of global travel and communications in pursuit of their goals. At least a dozen states are pursuing offensive BW programs, as are some terrorist organizations. The West Nile virus scare [see 3 Sep 99] last year in New York City indicates the confusion and fear that even the possibility of a BW attack can sow, and highlights the importance of collaboration among public health authorities, law enforcement agencies, and the Intelligence Community in monitoring global BW threats. Second, is the direct risk posed to US public health by the importation of infectious diseases. [...] Third, is the potential impact on US troops abroad and on the readiness of certain foreign militaries and their ability to engage in international peacekeeping operations. [...] Fourth, the worst infectious diseases — TB, malaria and, especially, AIDS — are likely to slow economic development and undermine the social structures in some countries and regions of interest to the United States. This will challenge democratic development and transitions, and possibly contribute to humanitarian emergencies and military conflicts to which the United States may need to respond. Fifth, in the economic realm, infectious-disease-related embargoes and restrictions on travel and immigration will cause frictions among and with key US trading partners and other states."

30 June In New York, the Preparatory Commission for the International Criminal Court [see 29 Nov–17 Dec 99] adopts its report, which among other things contains the report of the Working Group on Elements of Crimes, which itself sets out *Finalized draft text of the Elements of Crimes*. Of the war crimes specified in Article 8 of the Rome Statute of the ICC, two relate directly to chemical warfare, and for these the following elements have now been agreed:

For the *War crime of employing poison or poisoned weapons* [Article 8(2)(b)(xvii)]: "1. The perpetrator employed a substance or a weapon that releases a substance as a result of its employment. 2. The substance was such that it causes death or serious damage to health in the ordinary course of events, through its toxic properties. 3. The conduct took place in the context of and was associated with an international armed conflict. 4. The perpetrator was aware of factual circumstances that established the existence of an armed conflict."

For the *War crime of employing prohibited gases, liquids, materials or devices* [Article 8(2)(b)(xviii)]: "1. The perpetrator employed a gas or other analogous substance or device. 2. The gas, substance or device was such that it causes death or serious damage to health in the ordinary course of events, through its asphyxiating or toxic properties. 3. The conduct took place in the context of and was associated with an international armed conflict. 4. The perpetrator was aware of factual circumstances that established the existence of an armed conflict." Element 2 here has the following footnote: "Nothing in this element shall be interpreted as limiting or prejudicing in any way existing or developing rules of international law with respect to development, production, stockpiling and use of chemical weapons." The reference in this footnote to "existing ... rules" draws attention to the prohibition, contained in the 1925 Geneva Protocol, of the use in war of toxic substances whose effects may be less severe than "serious damage to health" (such as temporarily disabling chemicals). The reference to "developing rules" draws attention to prohibitions contained in the 1993 Chemical Weapons Convention.

30 June In Atlanta, Jack Smith, a co-producer of CNN's Tailwind documentary [see 7 Jun 98] files a fraud, wrongful termination and defamation lawsuit against the news network. Following the controversy provoked when the programme had been aired, Smith and his co-producer April Oliver had both been sacked [see 2 Jul 98]. Oliver had sued for wrongful dismissal in 1999 [see 7 May 99], a case which had recently been settled out of court for an undisclosed amount [see 26 May]. Smith's lawsuit claims that CNN fired him "to appease high level military officials".

30 June The US Defense Department issues, through *Commerce Business Daily*, a sources sought announcement to "determine the level of interest and capability available to meet the requirement of expeditiously developing a second manufacturer of [anthrax vaccine]". Potential manufacturers must have a BL-3 facility and be willing to share the FDA license with the current manufacturer [see 22 Jun]. According to the notice, the proposal process will be abbreviated, with award before 1 October anticipated.

1 July In the United Kingdom, researchers at the University of Manchester release findings from an epidemiological study of mortality among UK veterans of the Gulf War. The work, now published in *The Lancet*, shows a mortality over the period 1 April 1991 to 31 March 1999 that is 5 percent greater (395 vs 378) than that found in an era control group: a difference that is not considered statistically significant. The Ministry of Defence, which funded the work, later announces that it will continue to monitor mortality within the two groups and will regularly publish updated figures.

As of 4 July, the Ministry has received 1,841 notices of intention to claim compensation in respect of illness allegedly arising from the Gulf War.

6 July In London, the Royal Society publishes the report of its second [see 19 Sep 94] working group on biological weapons, *Measures for Controlling the Threat from Biological Weapons*. The report follows a meeting last year of the Royal Society, the US National Academy of Sciences and the French Academie des Sciences [see 26–28 May 99]. It sets out to consider the topic from a UK perspective and to inform policy-makers and the public about countermeasures against the BW threat to civilians. The report warns of exaggerating the threat of bioterrorism and recommends that the UK should establish an overall structure for dealing with attacks, comprising the police, public health authorities, the clinical and hospital services, the intelligence agencies and the military. In the foreword to the report, Royal Society President Aaron Klug says "every effort must be made to conclude successfully the negotiations over the Protocol for verification of the Biological Weapons Convention, which offers the best opportunity for reducing the possibility of biological weapons being used in warfare or terrorism". Appended to the report are the three detailed working papers on which it is based: "The nature of biological weapons, their effectiveness and an assessment of agents that are most likely to be used", "International control measures: The Biological Weapons Convention and its projected Protocol", and "National control measures: Management of the consequences of biological weapons attacks on civilians".

A theme that underlies the report is set out as follows in the second of these papers: "There are two main considerations of a scientific and technical nature. First, it is probable that, over the coming decades, there will be rapid technological change in the practical application of the life sciences, with developments in genetic technologies being of particular importance. Second, it seems no less probable that much of the new technology will be as applicable to biological warfare as to the promotion of human well-being and economic development. For the long term, these two considerations, taken together, do not bode well for international security. On the one hand, our species has historically been unable to avoid exploiting the dominant technology of the age for warfare. On the other hand, as understanding of life processes becomes increasingly profound, biotechnology may become capable not simply of destroying life but of manipulating each and every one of the processes of life, including cognition, reproduction, development and inheritance. It therefore seems that we are obliged to anticipate changes of a fundamental kind in the way our species fights its conflicts. Indeed, perhaps we must now start looking at that ancient taboo against CBW and at the BWC it has generated, not so much as contribution to our national security, but as essential underpinning for the welfare and even the survival of our species."

6–7 July In Beijing, officials from the US and China resume discussions on the nonproliferation of weapons of mass destruction [see 6 Jun]. The US delegation is led by John Holum, the Senior Adviser for Arms Control and International Security. Speaking at a press conference in the US embassy, Holum says "we agreed that the proliferation of weapons of mass destruction and their means of delivery are in neither

side's interests, nor in the interests of peace and stability in the region or in the world."

7 July In Russia, the State Duma transmits a message to President Putin noting that the country's destruction programme for chemical weapons has so far received only 3-5 percent of the necessary funding and that, as a result, it is four years behind schedule and in danger of missing the second CWC deadline as well as the first.

7–9 July In Hanover, New Hampshire, the Institute for Security Technology Studies of Dartmouth College hosts a conference, *Emerging Threats: Responding to Terrorist Threats in the Future*, that is intended to help better prepare for a catastrophic terrorist attack, particularly one using biological agents. More than 50 people participate, including federal and research-community specialists in the subject. One of the presentations, by Milton Leitenberg of the University of Maryland, closes with this observation: "[I]t is the combination of the enormous and overblown official US emphasis on a domestic bioterrorism threat, and the US government's neglect of biological weapon arms control, that is likely to spur a wider international resurgence of interest in biological weapons."

8 July Over the Pacific, a US missile interceptor launched from Kwajalein Atoll fails to hit a Minuteman II ICBM fired from Vandenberg in California. This was the third test in the series [see 19 Jan 00] designed to prove the feasibility of national missile defence. This latest setback is due to the failure of the "kill vehicle" to separate from its booster rocket.

10 July In Geneva, the Ad Hoc Group of states parties to the BWC reconvenes for its twentieth session of work on the BWC protocol. Participating are 51 states parties (the same as those that participated in the nineteenth session but with Cyprus and Thailand participating in place of Jordan, Mongolia, Panama and Singapore) and one signatory state (Morocco, as before). The session is due to end on 4 August. [For further details see *Prgress in Geneva*, above.]

10 July US Defense Secretary William Cohen announces a temporary slowing in the rate of anthrax vaccinations. With the sole manufacturer of anthrax vaccine in the US awaiting approval [see 22 Jun] from the Food and Drug Administration, the Anthrax Vaccination Immunization Program (AVIP) has been using stockpiled vaccine, supplies of which are now running low. In addition, a number of batches from the stockpile have failed potency tests, meaning that they cannot be used by the AVIP.

Speaking the next day, Major-General Randy West, Senior Advisor on Chemical and Biological Protection, says that the number of vaccinations would be cut from 75,000 per month to about 14,000 and would be limited to service personnel in the areas of highest risk, namely South Korea and nine countries in the Middle East (Kuwait, Saudi Arabia, Bahrain, Jordan, Qatar, Oman, UAE, Yemen and Israel). There are currently only around 165,000 tested and certified doses stockpiled. According to West, 455,378 service personnel have been given at least one shot, and 56,725 have received the full series of six shots. Addressing the threat to US forces, West says: "... since 1998, that threat has only increased. Both the technology and the intent to build these kinds of weapons, that kind of activity, has increased in some of the countries that we're most concerned about. ... There's also been an increase in the number of both state actors and non-state actors that have done things that have prompted our Intelligence Committee to believe they are trying to obtain the capability".

On the question of BioPort, West says that he expects the facility to achieve FDA certification by the end of the year. He also states that the Defense Department should make a decision on a second supplier for anthrax vaccine by then, the announcement having been published some days previously [see 30 Jun].

10 July In California, Cepheid announces a $1.8 million contract with the Army to develop a novel form of BW-agent detector. According to a company press release, the Microfluidic DNA Analysis System (MIDAS II) will provide rapid on-site testing for pathogens from environmental samples, including air. The release states, further: "[MIDAS II] will automatically process the biological material, extract the nucleic acid, and prepare it for testing. The system will then transfer the sample and Polymerase Chain Reaction reagents to eight independently programmable reaction sites, where real-time analysis will occur, enabling continuous and unattended operation over an extended time. All of the critical processes of the analysis will be carried out in a closed microfluidic system, including post-analysis clean-up and decontamination."

11 July In Yugoslavia, the state news agency Tanjug alleges that US air force pilots used chemical weapons during the NATO air attacks last year. Citing neither source nor substantiation, the agency states that pilots "were forced to use not only uranium and graphite bombs, but also chemical weapons banned by military law, without the European members of the Alliance being aware of it". The report goes on to assert that "in systematic chemical raids on the Pristina, Pec, Djakovica, Prizren, Urosevac, Gnjilane and Orahovac surroundings last spring, the US Air Force dispersed highly toxic nerve gases like 'yellow rain', 'blue gas' and 'viscose soman' (which were also used in the Gulf War)". The report also talks of more than 20,000 strikes using missiles containing banned poisonous gases, and a cover-up of the increasing number of desertions from KFOR because of "Balkans war syndrome".

11 July UNMOVIC begins a four-week training course for its staff [see 1 Jun]. There are 44 trainees from 19 countries. Among their instructors are the first Executive Chairman of UNSCOM, Rolf Ekéus, and also the last (acting) chairman, Charles Duelfer. The course is to cover historical, legal, administrative and political issues. Lecturers from Columbia University are to speak on Iraqi history and culture.

12 July In Geneva, the Administrative Tribunal of the International Labour Organization issues judgements on two cases brought by staff members of the OPCW Secretariat. Both cases refer to the classification of posts exercise which was carried out in 1998, the implementation of which was frozen by the third session of the Conference of the States Parties [see 16–20 Nov 98]. One case is dismissed, the other upheld. In regard to the latter, the Secretariat subsequently issues a paper on the financial implications of regrading its posts in accordance with the judgement. The paper estimates the increases in salaries and related expenses to amount to NLG 2.204 million for 1999 and 2000.

12 July In the US Senate, the Armed Services Committee convenes a third hearing in its series on the Anthrax Vaccination Immunization Program (AVIP). Testifying is

Deputy Defense Secretary Rudy de Leon, accompanied by: Major-General Randall West, Special Advisor to the Undersecretary of Defense for Personnel and Readiness; Dr Anna Johnson-Winegar, Deputy Assistant to the Secretary of Defense for Chemical and Biological Defense; Robert Lieberman, Assistant Inspector General for Auditing; Dr Kathryn Zoon, Director, Center for Biologics Evaluation and Research, FDA; Rear Admiral Jarrett Clinton, Acting Assistant Secretary of Defense (Health Affairs); and David Oliver, Principal Deputy Undersecretary of Defense (Acquisition, Technology and Logistics). The subject of debate is the announcement [see 10 Jul] two days previously by the Secretary of Defense that the vaccination programme would have to be temporarily slowed due to a shortage of vaccine. Referring to testimony the Committee heard at its April hearings, its chairman John Warner says: "We were assured in testimony that there were adequate supplies to permit the existing policy to continue until BioPort was licensed and producing vaccine". The Committee spends much of its time asking why this was not the case. Other questions raised cover the financing of BioPort [see 22 Jun] and why the Defense Department had decided to use a private sector company rather than constructing a government-owned contractor-operated vaccine production facility. Lieberman addresses the lessons that can be learnt from the current situation: "The limited supplier base problem regarding anthrax — regarding vaccines in general — are a particular concern. It's important that we learn lessons from this anthrax vaccine experience, because surely other vaccines will be required in the future and this is a very specialized niche of the pharmaceutical market. There's a tendency to believe there's tremendous industry capacity and interest in government contracting in this area because we have such a robust pharmaceutical industry in the United States, but this is not true. ... [V]accines are not money-makers unless they can be sold in huge quantities to the general public, and most of the vaccines that DOD may be interested in in the future may not fit that description."

The next day, the Military Personnel Subcommittee of the House Armed Services Committee also convenes a hearing on AVIP. Many of those testifying are the same as the previous day in the Senate, but with the addition of: General Tommy Franks, Commander in Chief, US Central Command; April Stephenson, Defense Contract Audit Agency; and Fuad El-Hibri, Chief Executive Officer, BioPort Corp. Much of the ground covered mirrors that of the previous day. Addressing the committee, El-Hibri cites three factors as causing the delay in resuming production at BioPort: "One, is obtaining FDA certification. ... Two, overcoming delays in renovations. ... And, third, changing the organizational culture."

13 July In Geneva, during the twentieth session of the BWC Ad Hoc Group, a further briefing is provided by the Quaker United Nations Office in conjunction with the University of Bradford Department of Peace Studies at which three further Bradford briefing papers on *Strengthening the Biological Weapons Convention* are presented by the two editors of the series, Graham Pearson and Malcolm Dando: No 29, *Maximising the Security Benefits from Technical Cooperation in Microbiology and Biotechnology* by Graham Pearson (a product of the recent NATO Advanced Research Workshop in Piestany [see 18–20 May]); No 30, *Draft Resolution Establishing the Preparatory Commission for the Organization for the Prohibition of Biological Weapons*, by Ian Kenyon and Nicholas Sims; and No 31, *The CWC Paris Resolution: Unresolved Issues*, by Daniel Feakes and Ian Kenyon. Also presented is a further 'evaluation paper' in the other Bradford series, *The BTWC Protocol*: No 18, *The BTWC Protocol: Revised Proposed Complete Text for an Integrated Regime*. This is an update of a previously issued 'evaluation paper' authored by Graham Pearson, Malcolm Dando, Ian Kenyon and Nicholas Sims. The briefing is attended by 36 people from 22 delegations.

14 July In Colombia, Environment Minister Juan Mayr tells The Associated Press that his government has no intention of testing, or even further studying, the fungus that is being promoted, with US backing, by the UN Drug Control Programme as a biological-control agent against illicit coca crops. A week previously, he says, newspapers had erroneously reported acceptance by Colombia of the proposal that it begin field-testing the EN4 strain of *Fusarium oxysporum* in preparation for a decision on whether to go ahead with the controversial coca-eradication project. Unauthorized testing in neighbouring Ecuador has been rumoured, but this is denied by Ecuadoran Environment Minister Rodolfo Rendon.

15 July Iran announces a flight test of its Shihab-3 missile [see 21 Jul 98], this time a successful test. The missile is reckoned to have a range of 1,300 km for an 800 kg warhead, which could put targets in Israel at risk, as well as US military bases in the region. Reacting to the test, Israeli Deputy Defence Minister Ephraim Sneh says "this is a step forward in the Iranian buildup of power and, as a state that Iran says is the devil and must be eradicated from the world, we cannot be apathetic". *Izvestiya* subsequently reports from Moscow that the missile has been developed "using the latest Russian technology" and that it is not intended to deliver a nuclear warhead but, rather, a chemical or biological one; it is expected to enter service in about five years' time.

15 July In Azerbaijan, President Heydar Aliyev decrees that the country's CWC National Authority shall be the Ministry of Foreign Affairs.

15–21 July In France, at Marly-le-Roi, a seminar to initiate programmes of medical treatment and humanitarian relief for survivors of chemical and other weapons in Halabja and other parts of Iraqi Kurdistan is convened by the Washington Kurdish Institute and Dr Christine Gosden [see 17 May] of the University of Liverpool. The conference is funded by the US Department of State and is also supported by the Swedish Defence Research Establishment, UNIDIR, the Kurdish Institute of Paris and several international NGOs. In attendance are the mayor of Halabja, the health ministers of the Kurdish regional governments, representatives of international humanitarian NGOs, and doctors from the region, including the deans of medical colleges in Suleymania, Erbil and Dohuk. Researchers from the Halabja Postgraduate Medical Institute have identified 250 villages and towns and 31 other uninhabited strategic areas attacked with chemical weapons throughout Iraqi Kurdistan during 1987 and 1988.

16 July Iraqi Vice President Taha Yassin Ramadan is quoted in *al-Jumhouriya* saying that UN inspectors will not be readmitted to the country before international sanctions are lifted.

17 July In Tokyo, the sentencing of three more Aum Shinrikyo members for their part in the 1995 sarin attack takes place. On Toru Toyoda and Kenichi Hirose, death sentences are passed for murder and attempted murder. Like Yasuo Hayashi [see 6

Jun], the men had been members of the five-man team that had dropped and then punctured plastic bags containing sarin on subway trains [see 20 Mar 95]. In their defence, the pair had said that they had been under "mind control" by Aum leader, Shoko Asahara. However, Judge Yamazaki says that their crimes were ones of "unprecedented mass murder that ignored human dignity". Toyodo had also been charged for his part in a foiled cyanide gas attack in Tokyo [see 5 May 95] and for sending a letter bomb to the then mayor of Tokyo, which wounded his secretary. With the sentencing of Toyoda and Hirose, all five of the cultists directly responsible for the subway attack have received sentences, all but one of them receiving the death sentence [see 6 Jun, 30 Sep 99 and 25 May 98]. The court also sentences another Aum member, Shigeo Sugimoto, this time to life imprisonment, for assisting in the subway attack (he drove another of the team, Yasuo Hayashi [see 6 Jun], who released sarin at Ueno station) and for his role in the murder of fellow cultists Kotoro Ochida [see 6 Jun] and Toshio Tomita in 1994. On 25 July, all three men launch appeals against their sentences.

Later, on 25 July, another Aum member, Satoru Hashimoto, is also sentenced to death. Hashimoto had been involved in the 1994 sarin gas attack in Matsumoto in which seven people had been killed [see 28 Jun 94]. He had conspired with Asahara and five other Aum members to release the gas and had driven the five to the site. He had also been involved in the construction of the cult's sarin production facility in Kamikuishiki during 1993 and 1994. Hashimoto is also sentenced for his role in the 1989 murders of lawyer Tsutsumi Sakamoto, his wife and one-year old son. According to one report, Hashimoto and other cultists injected the family with lethal doses of potassium chloride and then strangled them.

Later still, on 28 July, yet another former cultist also receives the death sentence. Kiyohide Hayakawa had been involved in the Sakamoto killings and in the murder of a fellow Aum member in 1989. In total, Hayakawa is found guilty of seven charges, including helping to produce sarin and LSD. His defence team immediately files an appeal against the sentence.

17 July In South Korea, the Ministry of National Defence announces that a consultative committee involving experts from the government, the military, local communities and civic groups will be established to ensure that the chemdemil plant in Yongdong province [see 8 May] poses no environmental or other dangers. A Defence Ministry official says that the visit is likely to take place after August, depending upon agreement to participate by the OPCW. According to the official, the plant will destroy "chemical materials", not chemical weapons, because of the dual-use nature of the materials. The facility had been inspected on 15 May by experts from Green Korea United and the Korean Federation for the Environmental Movement at the request of local residents.

17 July In Jerusalem, former UNSCOM Executive Chairman Richard Butler says during a public lecture that Iraqi Deputy Prime Minister Tariq Aziz had told him that Iraq possessed biological weapons in order "to deal with the Zionist entity". According to Butler in a later *Jerusalem Post* interview, Aziz "actually tried to say to me that's why Iraq created biological weapons, as if in some way they were especially reserved for Israel". Butler adds that he "will go to the grave not understanding exactly what he was saying there — not understanding the inner meaning of that. It almost sounds genocidal. But I don't want to say that, because I don't understand exactly what he was saying."

Next day he briefs the Knesset Foreign Affairs and Defence Committee and says that he has "no doubt at all that Iraq is back in the business of seeking to extend its weapons of mass destruction". The *Jerusalem Post* reports him as stating that Iraq possesses 16 missile-warheads loaded with anthrax agent and that he has received information that Iraq has rebuilt its factories for production of chemical weapons.

18 July In Belgrade, a Yugoslav Army spokesman, Colonel Svetozar Radisic, describes as a "false accusation" the charge that Yugoslavia is selling components for the production of chemical weapons to Iraq [see also 6 Feb 99 and 9 Mar 99].

18 July In Alabama, the Calhoun County commission is seeking $70 million from the US Army in "impact fees" to offset, it says, bad publicity and fear over the chemdemil incinerator that is being built at Anniston. This action is modelled on that of Tooele County, Utah, four years previously [see 15 May 96].

19 July Iran is deploying weapons of mass destruction as an element of threat against Turkey, so the Istanbul *Milliyet* reports. The newspaper continues: "According to a report prepared by Turkish intelligence units, Iran possesses more than 500 tons of chemical weapons. A major part of these weapons consists of nerve gases. The rest consists of other gases such as those that poison the blood. Noting that Iran has plans to produce nuclear weapons, the report enumerates the following facts: [1] The production of biological warfare material is carried out in nine factories located in Iran's northern and western regions. These factories operate through secondary and phoney companies. The production of these biological materials is carried out with the technical support of India, North Korea, and the People's Republic of China. [...]" A denial is subsequently issued by the Iranian embassy in Ankara.

19 July In the US House of Representatives, Congressman Benjamin Gilman introduces a bill, *North Korea Nonproliferation Act of 2000* (HR 4860), which he says would restore the linkage "between normalized economic relations with the United States and good behavior by North Korea with regard to proliferation". The bill would require the President to submit to Congress every six months a report identifying instances where there is credible information that North Korea has transferred to a foreign country "goods, services or technology listed on a nonproliferation control list (i.e., NSG, MTCR, Australia Group, CWC and Wassenaar control lists)".

20 July In Russia, the government approves the text of a note accepting further German aid [see 17 Dec 99 Brussels] for its chemdemil programme. Under the agreement, German firms are this year to furnish services and supplies valued at around DM 7.3 million. ITAR-TASS quotes the government information department on the deal as follows: "The funds will be used to purchase and deliver equipment for purifying waste water by means of thermal neutralization of waste water. The equipment will be used at the facility for the destruction of toxic chemical agents in the village of Gornyy in Saratov Region. Part of the funds will be used to purchase special equipment and machinery for carrying out rescue operations and to complete the construction of the production shops where technological processes involving the recycling of toxic chemical agents will take place." Television cameras had been admitted into the Gornyy facility earlier in the month, and Colonel Vyacheslav Solvyev interviewed there. Among other matters, he had contrasted the chemical detoxification process to be used in the

chemdemil facility with the US practice of incineration, asserting the superior safety of the Russian approach.

20 July The UK Defence Ministry publishes the third in a series of papers that review the possibility of UK forces having been exposed to CW agents during the Gulf War. The latest one, *A Review of UK Forces Chemical Warfare Agent Alerts During the 1990–1991 Gulf Conflict*, concludes that there is no evidence to suggest Iraqi use of chemical weapons, or the presence of chemical weapons, in any of the episodes of UK CW alarms. Each of the numerous episodes is described and examined in the paper, among them the NAIAD false alarms [see 24 Jan 95].

21 July Russian President Vladimir Putin tells reporters on the first day of the G-8 summit in Japan that he and UK Prime Minister Tony Blair had just "agreed to cooperation in the destruction of stored chemical weapons and other types of dangerous material" [see also 17 May Moscow]. Unidentified British government sources are later quoted as saying that the Prime Minister had told the President that the UK will provide Russia with £82 million for the disposal of plutonium and chemical weapons.

21 July In the UK the government publishes its third annual report on *Strategic Export Controls* [see 3 Nov 99] covering calendar year 1999. The report records that 73 Standard Individual Export Licences were denied or revoked during the year because they risked "contributing to proliferation of weapons of mass destruction or ballistic missiles". Among the many other details presented is the information that export licences for Australia Group chemicals were issued for destinations in at least 55 countries, among them Burma, Egypt, Iraq, Libya, Sudan and Syria. Among the importers of British CS munitions during the year was Turkey [see 28 Oct 99], under a temporary export licence. Other licensed exports of CS or irritant-agent munitions during 1999 were to destinations in Australia, Brunei, Canada, Cyprus, Denmark, Finland, France, Greece, Hong Kong, Maldives, Mauritius, Morocco, Norway, Poland, Portugal, Singapore, Spain, Sri Lanka, the UAE, the USA and Zambia. At Appendix E the report reprints the government response, issued on 14 July, to a Quadripartite Select Committee report on the two previous annual reports.

21 July In the United States, preliminary findings from the Danforth inquiry [see 26 Aug 99] exonerate the administration of any wrongdoing during the ending of the siege at Waco, Texas, in 1993, during which some 80 members of the Branch Davidian sect lost their lives [see 19 Apr 93]. The inquiry had sought to resolve four key questions, now concluding that government agents did not start the fire, did not shoot at the cult members, did not improperly use the military, and did not engage in a cover-up. Administration failure to disclose full details about irritant-agent employment is, however, confirmed.

A week earlier a jury in Texas had dismissed allegations by relatives of the dead cult members that the government had been responsible for their deaths.

21–23 July In Japan, at Okinawa, the Group of Seven major industrialized nations and Russia meet in summit session. The final communiqué includes the following: "We welcome the reinforcement of global regimes to prevent proliferation of weapons of mass destruction and their delivery systems. ... We will work to increase the level of international contributions to the Russian chemical weapons destruction programme. We commit ourselves to work with others to conclude the negotiations on the Verification Protocol to strengthen the Biological Weapons Convention as early as possible in 2001."

24 July The UK Defence Ministry announces that the projected partial privatization of DERA [see 26 Oct 99] is to go ahead. The CBD Sector at Porton Down will be retained under government control along with the Defence Research Information Centre, the Defence Radiological Protection Service and the Centre for Defence Analysis, while the remaining two-thirds of the Agency will be floated on the stock market, possibly in 2001. The two parts of DERA, NewDERA and RetainedDERA, are expected to be separated by the end of 2000. The Defence Ministry will initially retain a 30–40 per cent holding in NewDERA, but does not intend to be a long-term holder. RetainedDERA is likely to consist of around 3,000 staff.

24 July In Washington, the defence ministers of Armenia and the United States, Serzh Sarkisyan and William Cohen, sign an agreement aimed at improving Armenian border controls relating to weapons of mass destruction. Under the agreement, the United States will provide equipment and training valued at $300,000. Secretary Cohen tells reporters: "The equipment will include nuclear and contraband detection kits to help Armenian authorities to prevent the unauthorized transportation of nuclear, chemical and biological weapons and components. We have similar agreements with nine other countries that want to work with us to control weapons of mass destruction."

24–25 July In Bangkok, foreign ministers of the Association of Southeast Asian Nations convene for the 33rd ASEAN Ministerial Meeting. They adopt a joint communiqué, which, at paragraph 31, states: "The Foreign Ministers stressed the importance for all states which had not ratified [or] acceded to the Chemical Weapons Convention (CWC) to consider doing so at the earliest opportunity and noted the progress in negotiating a verification Protocol to strengthen the Biological Weapons Convention (BWC) by the Ad Hoc Group of the States Parties to the BWC."

24–26 July In Kazakhstan, at Stepnogorsk [see 30 Jun 98], an international conference, *Former Biological Weapon Facilities: Dismantlement and Prospects for Conversion*, is convened by the Monterey Institute of International Studies and the Center for Biotechnology of Kazakhstan. The 70-odd participants include people from Russia (among them representatives of the Volga-Vyatsky Center for Applied Biotechnology, Kirov), Sweden, the USA and Uzbekistan as well as Kazakhstan and the Harvard Sussex Program. Papers presented over the three days fall into three main categories: "Destruction of former objects for production of biological weapons in Kazakhstan and Russia and non-proliferation", "Conversion of former objects for production of biological weapons in Kazakhstan", and "Scientific reports of Russian and Kazakhstan participants".

In the course of the conference, the US Department of Energy announces its support for further collaborative projects involving scientists from the United States and former Soviet BW scientists. The Department has now approved 55 such projects within the biological programme of its Initiatives for Proliferation Prevention [see 15 Jun 99], four of which are announced at the conference. One of the new projects, *Alternatives to chemical pesticides*, partners the Russian State Research Center for Virology and Biotechnology ([see 10 Dec

99] with the US Pacific Northwest National Laboratory in the development of a biological control agent [see 21 Dec 99] for protection of agricultural crops as an alternatives to chemical pesticides. The US industry partners in this project have made an investment of $560,000.

Included in the conference timetable is a guided tour around JSC "Biomedpreparat" buildings 211, 231 and 250, the Monitoring Laboratory, and the Institute of Pharmaceutical Biotechnology.

25 July In Geneva, during the twentieth session of the BWC Ad Hoc Group, a briefing for delegations is provided by the Federation of American Scientists in conjunction with Pharmaceutical Research and Manufacturers of America. The subject is national implementing legislation, particularly from the point of view of industry, the joint FAS/PhRMA paper on the subject [see 31 May] being presented. Because the event coincides with a Western Group meeting, Ad Hoc Group Chairman Tibor Toth asks that it be repeated two days later, which it is. About 30 delegates participate on each day.

25 July The UK House of Commons Foreign Affairs Committee report from its new inquiry into *Weapons of Mass Destruction* [see 5 Apr 95] is ordered to be printed, and is released a week later. During its investigation, the committee had taken evidence from a number of experts in the CBW field and had received additional written evidence on the subject.

Regarding the CWC, the committee recommendations include the following: "We recommend that the Government urge the USA to rescind its power of Presidential veto, bringing the USA in line with the rest of the States Parties in time for the 2002 review conference. [...] We ... recommend that the Government, and its European partners provide higher levels of aid in assisting Russia to dispose of its chemical weapons arsenal."

And on the BWC: "We recommend that the Government use the UK's position as a close ally of the USA to convince it that a strong verification procedure for biological and toxin weapons which does not affect commercial confidentiality is a viable and achievable goal. We further recommend that the Government exert maximum bilateral and international pressure on those countries who have not yet become States Parties to the Biological and Toxin Weapons Convention to do so. [...] [This Convention] is an integral part of the web of deterrence against states developing and stockpiling WMD. For it to be effective, it has to have an equally stringent verification regime to that of the Chemical Weapons Convention. We endorse the Government's view that an effective BTWC Protocol requires a package of complementary measures — declarations, visits and investigations. Whilst recognising the need to take account of legitimate concerns about protecting commercial proprietary information, we believe that national security requirements demand that the BTWC contains the strongest verification regime that can be agreed. The Government has played a positive role in arguing for such a regime. We recommend that the Government reiterate this position and push for an early conclusion to the negotiations."

25 July In the UK, a House of Commons Quadripartite Select Committee, consisting of members from the select committees on defence, foreign affairs, trade and industry, and international development, issues a further [see 21 Jul] report, *Strategic Export Controls: Further Report and Parliamentary Prior Scrutiny*. The report calls for major reform in procedures for overseeing arms exports through the introduction of a system of prior parliamentary scrutiny: "We are convinced that accountability demands that Parliament is engaged in scrutiny of arms export licences before as well as after their grant. Prior scrutiny should be designed to ensure that Parliament has a voice in matters of such crucial importance before final decisions are taken. Issues of such importance warrant democratic involvement." Under the proposal, the Quadripartite Committee would be the parliamentary committee responsible for operating the prior scrutiny system, in addition to its existing examination of licences granted.

25 July The UK Ministry of Defence declines to answer a parliamentary question about whether the nerve-gas GF is more or less toxic to humans than the nerve-gas sarin on the grounds that to do so "could aid proliferation".

25 July At Porton Down, the UK CBW defence research establishment, "over 20,000 individuals have participated in projects aimed at developing protection against and treatment for the effect of chemical and biological agents" since work began there in 1916, according to a Defence Ministry reply to a parliamentary question.

25 July The US House of Representatives passes HR 4210, the *Preparedness Against Terrorism Act of 2000* [see 4 May]. The bill is received next day in the Senate and referred to the Environment and Public Works Committee.

26 July In India, the upper chamber of parliament, the Rajya Sabha, passes the *Chemical Weapons Convention Bill, 2000* [see 8 May], which now goes to the Lok Sabha.

26 July In Kazakhstan, the former chemical weapons production facility at Pavlodar had not been identified in the US–USSR data exchange under the 1989 Wyoming Memorandum of Understanding [see 22–23 Sep 89] according to a detailed account of the facility now published in *The Nonproliferation Review*. This account, by Gulbarshyn Bozheyeva, states that the plant was "a dual-purpose complex in which civilian chemical production served as a cover for military activities". The account continues: "This plant appears to have been the most recently constructed of the Soviet [chemical weapons] production centers". Dr Bozheyeva goes on to quote plant officials as believing that Site Number Two at the facility was intended to manufacture "six types of the latest, 1980s-generation, binary chemical weapons". She also says that the facility was intended to substitute for some of the production lines at Novocheboksarsk and Volgograd. She writes that Site Number One of the huge complex had commenced production of civil chemicals in 1973, but that construction of the military site had still been incomplete in 1987 when, at the order of CPSU General Secretary Mikhail Gorbachev, work on the new production lines ceased, dismantlement and conversion then beginning.

The account states, further, that, as of June 1999, the phosphorus trichloride plant at Site Number Two remained in production, having been operational since 1989. The Site Number Two production plant for CW-agent intermediate was used until 1992 (when its corrosion-resistant silver reactor-linings were removed) for manufacture of such civil-use products as the fluoro-ether Folitol-163 used in pumping equipment, the plant growth regulator Gidrel, which is the hydrazinium salt of 2-chloroethylphosphonic acid, a CWC Schedule-2 chemical, and various fluorinated acrylates to be used in textile-coatings and synthetic rubber. The hastelloy-lined plant that still remained in the

intermediate-production building was in use in June 1999 for manufacture of the anti-scaling agent IOMS, which is the disodium salt of nitrilo-trimethylene-phosphonic acid.

Other former CW-related facilities in Kazakhstan are mentioned in the article, but without detail: a production plant in Zhambul and a storage facility on the Ili river.

26 July The UK House of Commons Defence Committee report from its inquiry into *Iraqi No-Fly Zones* [see 8 Oct 99] is ordered to be printed. The report, which considers both the humanitarian and the legal basis for the no-fly zones as well as relating details of the patrolling by the Royal Air Force, puts forward various recommendations, but its basic conclusion is as follows: "Until the government of Iraq has clearly demonstrated that its intentions towards the countries of the region and towards its own people have changed, the UK contribution to the no-fly zones operations should continue".

26 July The UK Defence Ministry, responding to a parliamentary question, informs the House of Commons that the chemical agent CR, which it says has "severe short-term incapacitating effects", "may be deployed and authorised for use by the Armed Forces in certain special circumstances, particularly where it might enable the use of firearms to be avoided". Although this one does not do so, an earlier parliamentary reply [see 26 Apr 99] had made it clear that the rules of engagement for the use of CR were "consistent with the provisions of the Chemical Weapons Convention, which explicitly permits the use of toxic chemicals for law enforcement purposes".

26 July In the US House of Representatives, the National Security, Veterans' Affairs and International Relations Subcommittee of the Government Reform Committee conducts a hearing on *Combatting Terrorism*. Among the witnesses is Seth Carus of the National Defense University, who provides testimony on potential terrorist use of chemical, biological, radiological and nuclear weapons. He notes that, and explains why, the primary threat from CBRN weapons comes from hostile states, not from terrorists.

27 July In Bangkok, under the chairmanship of Thai Foreign Minister Surin Pitsuwan, the ASEAN Regional Forum convenes for its seventh meeting, which is attended by the foreign ministers, or their representatives, of all the participating countries: Australia, Brunei Darussalam, Burma, Cambodia, Canada, China, the European Union, India, Indonesia, Japan, both Koreas, Laos, Malaysia, Mongolia, New Zealand, Papua New Guinea, Philippines, Russia, Singapore, Thailand, the United States and Viet Nam. The subsequent Chairman's Statement notes, at paragraph 25, that the Ministers "reiterated their support" for the work of the BWC Ad Hoc Group and also reiterated "their call for a speedy conclusion" of the "negotiations on a verification Protocol for the BWC".

27 July In Russia, the government transfers control of the chemdemil programme from the Defence Ministry to the Munitions Agency [see 22 Sep 99 Moscow]. The Chief of the Defence Ministry RKhB Protection Troops, Col Gen Stanislav Petrov, tells ITAR-TASS that the programme does not need radical reform: "We have modern and totally environmentally safe technology which is largely unique. We have well-prepared personnel. We only lack funds." He says that at least $6 billion will be needed to destroy the holdings of CW agents.

27 July In the US Defense Department, Bernard Rostker, Special Assistant for Gulf War Illnesses, announces the publication of five new reports. Among these are two environmental exposure reports. One is on *Particulate Matter* and presents what is currently known regarding the exposure of US personnel to particulate matter during the Gulf War. Particulate matter levels in the Gulf were often twice the recommended levels for safeguarding health. However, the report suggests that long-term adverse health effects are not likely, but it does recommend further research. The second environmental exposure report, *Chemical Agent Resistant Coating,* is a final version of an interim report released in February. The report says that a polyurethane paint like CARC can cause health problems, but that it was not responsible for many of the symptoms and illnesses of some Gulf War veterans.

Also released are two more case narratives. One deals with *Possible Mustard Release at Ukhaydir Ammunition Storage Depot* [see 4–5 Sep 97] as a result of two Coalition airstrikes on the depot. The narrative does not come to any firm conclusion as to whether mustard gas had been released. However, it states that even if there had been a release American forces were well outside the potential hazard area. The investigation remains open. The second case narrative, *Possible Chemical Agent on Scud Missile Sample*, is a final version of an earlier report [see 12 Aug 97]. The 1997 report had stated that the presence of any chemical warfare agent on a fragment of missile warhead was "unlikely". The warhead fragment had been presented to the Presidential Advisory Committee on Gulf War Veterans' Illnesses during a meeting in North Carolina in September 1995 by a veteran. Since no new information or additional leads had been received by OSAGWI since its interim report, the Presidential Special Oversight Board recommended that it be republished in a final version.

The fifth report released is an information paper, *Iraq's Scud Ballistic Missiles*, containing background data on the missile, how Iraq used it and how Coalition forces reacted. The interim report cites pre-war intelligence that Iraq had developed CBW warheads for the Scud and that a successful test with a CW warhead occurred in 1990. However, the CIA had also reported in 1991 that Iraq lacked the fusing and detonation technology to actually use the warheads it had designed. According to Special Assistant Rostker: "Our investigation found no evidence that Saddam Hussain fired Scud missiles armed with chemical or biological warfare warheads at either Israel or the KTO [Kuwait theatre of operations]". However, the report does state that the oxidizer used in Scud missile propellant (inhibited red fuming nitric acid, or IRFNA) [see 19 Mar 98] is a highly toxic substance, the appearance and effects of which could be mistaken for a chemical warfare agent. According to the report, Iraq fired 42 Scuds at Israel and 46 into the KTO.

27 July In the US Claims Court in Washington, the US government is sued for $50 million by Salah Idris [see 10 Aug 99], the owner of the Al-Shifa pharmaceutical factory in Sudan that had been destroyed by US cruise missiles nearly two years previously [see 20 Aug 98 and 12 Oct 99]. The lawsuit says: "The plant did not contain any facilities that could have been used to manufacture chemical weapons or any chemical component of chemical weapons". Reacting to the suit, a US State Department official says: "We have reliable information, this is nothing new, that Osama bin Laden was seeking to acquire weapons of mass destruction for use against American targets. ... Nearly two years since this attack, the evidence about the purpose of this chemical plant remains persuasive".

28 July The US Food and Drug Administration Advisory Committee on Anti-Infective Drug Products votes unanimously to recommend FDA approval of ciprofloxacin for post-exposure treatment of inhalation anthrax. If the FDA accepts the recommendation, the Centers for Disease Control and Prevention (CDC) will include the antibiotic in the National Pharmaceutical Stockpile programme begun last year as a precaution against biological terrorism. Bayer Corporation has for the past 13 years been marketing the drug, which is approved for a wide variety of infections, and the company has recently been urged by the FDA, the CDC and the Defense Department to apply for approval of the new use.

29 July The Vietnamese and United States governments have now reached informal agreement to initiate joint scientific research into the effects of Agent Orange [see 29 May 99], so it is reported from Hanoi by the *Los Angeles Times*. The research will identify areas where levels of dioxin remain high, devise cleanup methods and study related health problems. There is currently no talk of compensation, but the research could lead to "humanitarian" financial assistance.

29 July In Baghdad, former UNSCOM Chief Inspector Scott Ritter arrives with a film crew to start work on a documentary aimed at determining whether Iraq has been rebuilding its arsenal of proscribed weapons during the 19 month period since UNSCOM inspections ceased. In the course of his visit, he will tour existing and destroyed weapons facilities and will investigate claims by Western intelligence sources that Iraq is developing new viral warfare agents in an underground facility, as reported in the *Washington Post*. Explaining the turnaround in his opinion on Iraq's CBW programmes, Ritter says: "My personal feeling is that Iraq is qualitatively disarmed and the Security Council should reassess its position".

30 July In Washington, Pharmaceutical Research and Manufacturers of America (PhRMA) [see 25 July Geneva] posts on its website a paper entitled *Compliance Protocol to the Biological Weapons Convention: A Joint Position of European, United States and Japanese Industry*. The posting identifies neither the origin of the paper, nor its authors nor any corporations that may endorse it. After expressing support for the BWC Protocol negotiation and stating that it should not "exempt private industry", the paper continues: "However, since our member companies are only engaged in the legitimate use of microbiology and the newly emerging biotechnologies, compliance measures affecting their activities and facilities will need to be addressed carefully when drafted." The paper then addresses two of the matters currently under negotiation: declarations and on-site activities.

On *Declarations*, the paper says: "Our industries support simple declarations of relevant activities, in order to promote transparency and build confidence that their facilities engage in legitimate enterprises. However, triggers for declarations under the Protocol must be precisely analyzed and defined as to encompass only those private industry facilities of greatest relevance to the detection and deterrence of biological weapons. In order to avoid a disproportionate burden on industry, declaration formats must be simple and not require any confidential business information. In the event of questions and/or ambiguities about declarations, clarification procedures between the International Secretariat and the State Party concerned are regarded as appropriate but should not necessitate any on-site activities."

On *On-Site Activities*, the paper says: "Since the nature of microbiology is such that [it] is often easy to remove traces of any development, manufacture or storage of a biological-warfare agent, any routine on-site activity is not a useful concept under the Protocol. However, our industries support the concept of non-routine, non-random 'familiarisation' visits, provided they are voluntary and under the full control of the company visited. Whilst we do accept that where serious violations are alleged it may be appropriate for the international community to conduct a challenge inspection, improper or unsubstantiated claims of violations must be prevented. [...] Therefore, strict managed access must be employed and the inspected site must have the final determination of what is confidential or proprietary information. If no evidence of a violation is found, this must ultimately be reported by the oversight authority."

31 July President Vladimir Putin signs a decree ordering the dismissal of six senior Russian generals. Among them is the head of the Defence Ministry RKhB Protection Troops, Col-Gen Stanislav Petrov [see 27 Jul].

31 July In Oregon, in Portland US District Court, an injunction to halt construction of the chemdemil incinerator at Umatilla [see 1 May 97] is filed on behalf of 18 men who had been sickened during its construction the previous September, allegedly through exposure to CW agents stored there.

Forthcoming events

17 October, New York City — *Strengthening the Biological Weapons Convention*, panel discussion organized by the NGO Committee on Disarmament & the UN Department for Disarmament Affairs.

26–27 October, Seville — Workshop on CWC-related legislative issues organized by the Spanish CWC National Authority and the OPCW Technical Secretariat.

1–5 November, Warsaw — NATO Advanced Research Workshop on *Scientific and Technical Implications of the BTWC Protocol for Civil Industry*.

12–13 November, Cornell University — Workshop on *Agro-terrorism: what is the threat?* Enquiries to Kathleen Vogel: fax +1 607 254 5000 or kmv8@cornell.edu

13–14 November, Moscow — Green Cross Public Forum, *Challenges to implementation of the CWC in Russia*. Enquiries to: fax +7 095 299 7038 or gcrus@glasnet.ru

20 November–8 December, Geneva — Twenty-first session, BWC Ad Hoc Group.

28–29 November, Washington, DC — Second National Symposium on Medical and Public Health Response to Bioterrorism. Further info: *www.hopkins-biodefense.org*

5–6 December, Edinburgh — Janes' Fourth Annual Conference on Non-Lethal Weapons. Further info: *conference.janes.com*

5–8 December, The Hague — Twenty-second session, OPCW Executive Council.

9–11 February, Wiston House, Sussex — Wilton Park conference on *International Co-operation to Prevent CBW Terrorism*. Enquiries to: fax +44 1903 814217 or heather.ingrey@wiltonpark.org.uk

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UK National Authority Annual Report

Subscribers to *The CBW Conventions Bulletin* will find enclosed with this issue a copy of the recently published *1999 Annual Report* of the UK CWC National Authority [see News Chronology 22 June].

As a contribution to enhancing transparency of implementation of the CWC, the Harvard Sussex Program would be happy to distribute copies of similar annual reports from other countries with future issues of the *Bulletin.*

For further information, please contact HSP at the University of Sussex.

Bulletin 48 News Chronology

HSP has received requests for copies of the News Chronology that would have appeared in the last issue of the *Bulletin*, had it not been excluded for space reasons. A second supplement to *Bulletin* 48 has therefore been produced and placed on the HSP website in PDF/Acrobat format for readers to download.

In case of difficulty, please contact Richard Guthrie at Sussex.

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