

CHEMICAL WEAPONS CONVENTION BULLETIN

News, Background & Commentary Relevant to Chemical Weapons & Chemical Arms Control

ISSUE NO. 16

JUNE 1992

Quarterly Journal of the Harvard-Sussex Program on CBW Armament and Arms Limitation

CHEMICAL WEAPONS AND THE NEW GLOBAL SECURITY STRUCTURES

by Rolf Ekéus



Executive Chairman, United Nations Special Commission

On 3 April 1991, the Security Council of the United Nations adopted the cease-fire resolution which signified the formal end of the Gulf War, Resolution 687 (1991). At the same time, the Council decided to take stringent measures on the weapons provisions of the cease-fire. That was really the first time the Council had done any such thing. Although it had touched lightly on weapons issues previously, as in the arms embargo on South Africa, as a fundamentally political body the Council had kept itself at arms length from weapons problems. So, in that sense, SCR 687 is of great significance: it has established a most important principle.

An additional aspect of SCR 687 was that the Security Council also decided to follow closely the implementation of the weapons part of the resolution. To that end, the Council established a special body, the Special Commission (UNSCOM), as a subsidiary organ of the Security Council itself. It is the first real independent organ that the Council has ever established. There had previously been some other *ad hoc* activities -- the Sanctions Committee is of course part of the Security Council itself -- but here was an interesting new construction on the international scene. With the cease-fire resolution, the international community has been provided with an institution with the specific task of overseeing elimination of Iraq's weapons of mass destruction and of ballistic missiles with a range greater than 150 kilometers. One can indeed look upon that institution as something of a pilot plan, a pilot institution, and draw lessons from it; and maybe one should derive warnings as well.

The Council resolution, in its application to Iraqi capability, has two basic components. First, the resolution provides for the identification of all existing weapons of the proscribed types and the production capabilities. With regard to chemical, biological and nuclear capabilities, research and development facilities are in-

AGREEMENT NOW IMMINENT

A text for the Chemical Weapons Convention will probably be agreed in Geneva before our next *Bulletin* is published. At press-time for the present issue, the Chairman of the CD Ad Hoc Committee on Chemical Weapons, Ambassador Adolf Ritter von Wagner of Germany, has just released a complete new draft treaty. In contrast to its predecessors, this draft has neither dissenting footnotes nor bracketed alternative language nor sidelines indicating discord. To get to this point from the Chairman's 18 May 'vision' of the treaty, Ambassador von Wagner and his Bureau have had to lead the 74 member and participating non-member delegations through a tight and exhausting series of interlocking consultations. These negotiations were accelerated by the Australian model compromise convention of 12 March. Political pressure to agree has been very strong. The Chairman is now proposing that there be no changes to his draft save by consensus. The expectation is that, in substance, this latest draft is the one which governments will soon be asked to sign.

Whether that expectation is or is not borne out will start becoming clear once the Conference on Disarmament reconvenes on 20 July, for the CD will then have some two weeks to register consensus if the text is to be transmitted, properly translated into all official languages, to the United Nations General Assembly in time for the annual session that begins in September. Partly in order to increase commitment and partly with an eye on electorates back home, the CD may perhaps go into ministerial session for participating governments to 'initial' the draft treaty before it finishes work on 3 September. Provided no major dissent is revealed in the subsequent UN General Assembly debate on a resolution commending the treaty for signature, the stage will then be set for a formal signing conference, perhaps in January 1993, most probably in Paris as proposed five months ago by President Mitterrand.

Guest Article: by Rolf Ekéus	1-4
News Chronology: February-May 1992	5-22
Recent Publications	23
Forthcoming Events	24

cluded for them. With regard to missiles, the prohibition is limited to production and repair facilities and does not touch upon research and development. There is thus a slight differentiation between the two categories, but for chemical weapons, the whole complex of production, development and research is covered by the ban.

The second component of the resolution has to do with verifying and monitoring. According to the resolution Iraq is not allowed to acquire any of the four types of weapons. To enforce this ban, a verification and monitoring system is to be established. The Council itself could not develop the methods for verification and monitoring. This task was given to the Special Commission and, with regard to nuclear weapons, to the International Atomic Energy Agency (IAEA) in cooperation with the Special Commission.

It is quite an achievement that the Commission, in a couple of months, was able to develop a full plan for monitoring and verification of chemical weapons. For the working-out of a full verification and monitoring regime for Iraq, I recruited for the Commission a number of experienced negotiators from Geneva. This small group was very effective and, as is demonstrated by the plans themselves, did a very good job.

Looking at the chemical weapons part of the plans, one can see that it contains both general provisions and specific rules. The general provisions enable inspections anytime, anywhere and on short notice or on no notice at all. They also empower the Commission to undertake aerial surveillance of Iraq. High-altitude air surveillance is carried out with the help of a U-2 aircraft. The Commission now flies at least twice a week over Iraq. The Commission also has the right to carry out normal-level or low-level aerial surveillance of Iraq anytime over declared and undeclared locations. The Commission has the right to halt and control any vehicle moving in Iraq. The Commission is also under

instruction by the Security Council to link this control plan with the sanctions which are in place in Iraq. The idea is that the Sanctions Committee will cover the proscribed items outside the Iraqi borders, and when they enter Iraqi territory, they come under the control of the Special Commission. This plan was adopted by the Security Council on 11 October 1991, under Chapter VII of the Charter of the United Nations, by Resolution 715 (1991).

The implementation of the initial stages of the plan -- identification and destruction -- have been carried out in spite of consistent efforts by Iraq to evade and hide as much as possible of its relevant assets. However, the rather forceful tools given to the Commission have helped it to proceed with great speed. I am quite confident that we have covered almost all chemical weapons. There may be only some small storage left. The Commission has found something like 50,000 pieces of filled munitions, mostly artillery rockets, bombs and ordinary artillery shells and 75,000 pieces of unfilled munitions designed for chemical weapons use. Some hundreds of aerial bombs filled with CS have been found.

The magnitude is considerable. Iraq started by declaring something like 10,000-15,000 munitions, but since then more and more have come forward. The actual destruction of these capabilities is difficult. However, the Commission is in the process of developing plans for the destruction in Iraq of these weapons. They are filled with mustard gas and various combinations of nerve agents. Some of them are filled with CS. We consider CS-filled munitions as proscribed items as these munitions are stored for obvious military purposes.

Most of the chemical weapons and production capabilities are brought to one central location in Iraq. All the weapons which can be transported without risk for the population are transferred to this location. We

The *Chemical Weapons Convention Bulletin* is edited and published quarterly by the Harvard-Sussex Program on CBW Armament and Arms Limitation (ISSN 1060-8095). The goal is to provide information and analysis toward an effective multilateral treaty which will eliminate chemical weapons and help prevent the exploitation of biomedical technologies for hostile purposes.

Editors: Matthew Meselson
Harvard University
Cambridge, Massachusetts

Julian Perry Robinson
University of Sussex
Brighton, UK

Advisory Committee: Dr. Will Carpenter, St. Louis, MO
Ambassador Jonathan Dean, Washington, DC
Ambassador Charles Flowerree, Washington, DC
Dr. Shirley Freeman, Melbourne, Australia
Ambassador James Leonard, Washington, DC
Dr. A.J.J. Ooms, Delft, The Netherlands

Producers: Lora Lumpe and Ann Walsh, Federation of American Scientists

For subscriptions to the *Bulletin*, write or telephone the Federation of American Scientists, 307 Massachusetts Avenue NE, Washington DC 20002 [phone 202-675-9166]. The annual price is \$25 for US subscribers and those abroad who are able to pay it.

are constructing two plants for destruction, one for the destruction of mustard gas through incineration, and one plant for nerve gas through hydrolysis. The Commission's scientists appear quite confident that this is the effective way, given the prevailing conditions in Iraq. We expect to start full-scale destruction activities of the slightly less than 50,000 pieces of filled munitions by the middle of this summer. Then it is anybody's guess how long that will take. One year could be a realistic assessment. However some pessimists talk about 18 months from the start of this summer.

Concerning other weapons, the Commission is of the opinion that there are still some missiles not accounted for. The great majority of the missiles have however been discovered. The Commission has found 75 Scud missile warheads designed for chemical weapons use. As a Scud missile is a long-range missile, about 150 kilometers, with modifications up to 900 kilometers, Iraq had thus the capability to deliver chemical weapons over long distances. Of course these capabilities are now destroyed.

It is obvious that the end of the East/West political confrontation implies also the end of the global security structure where confrontational dualism had become something of the organizing principal during the last four decades.

This dualism, centered in the European Northern hemisphere, reached more widely. It covered Africa, South-East Asia, Central America and the Middle East and influenced developments there, not necessarily as a dominating factor but always as an important component in the political development. The confrontational character of such international relations did lead to the perception of security as a function of threat, driven by the mutual arms build-up of strong conventional forces and potent nuclear capabilities. Armament and arms control during this confrontational era became logically a function of the dialectics of the East/West confrontation.

Now, as this confrontation disappears, we see a radical shift in international relations. There is a true political mutation taking place on a global scale. This shift has direct consequences for contemporary arms control. Given the symbiotic relationship between security structures and arms control, it is evident that the future of arms control and disarmament will have to be modelled on the paradigm of emerging security structures.

In Europe, contemporary security problems flow from the challenges confronting the newly liberated or emerging States trying to find a foothold in the market economy, and trying also to master the contradiction of "cohabitation" in democracy between national aspirations and minority rights.

In spite of political complexity and confusion, the security policy implications in Europe are fortunately matched by the coming CFE Treaty, which puts definite ceilings on the major conventional weapons and by the CSBM Agreements that provide a stabilizing system of military transparency and predictability. These arrangements are far from perfect, but they nonetheless constitute a security system for this multipolar and still very heavily-armed region in Europe. Both the CSBM, and, especially, the CFE regimes have their shortcomings, for they were conceptualized at a time when confrontational dualism still was the prevailing security structure in the world. However, the confidence-building character of these regimes could make them into something of a foundation for the cooperative security necessary within the new realities of subregional and ethnic strife, conflicts which are now re-emerging after dormancy during the Cold War era.

Although contemporary security concerns are more regional than global in character, something of a global collective perception of common threats now seems gradually to be emerging. This perception is first and foremost related to weapons of mass destruction. The nuclear threat is conceived as the most significant. An ongoing collective threat stems from the possibility of proliferation of nuclear weapons following the break up of the Soviet Union, as well as from the continued ambitions by some states to keep nuclear options open.

But there is also serious reason for concern about the proliferation of chemical weapons. Chemical weapons have been used on a large scale only as long ago as World War I, with terrible consequences for the combatants. In 1925, use of such weapons was prohibited by the Geneva Protocol. During World War II, these weapons were not used in Europe. Up until recently, little use had been made of them. The reasons have been disputed. Legal positivists have pointed to the banning in the Geneva Protocol as the reason for non-use, others to the gradual emergence of the customary law. However, other more pessimistically inclined persons, or pragmatists, have stated that chemical weapons have not been used because of their low efficiency in modern warfare. Advanced techniques for protection of troops and the cumbersome handling for the user himself have been cited as reasons for the reluctance to employ chemical weapons in modern warfare.

Recently, however, chemical weapons have seemed to re-emerge as an important military factor. Iraq's use of chemical weapons in the war against Iran has been proven by the United Nations. International consensus appears to prevail that the strictly military effects of Iraq's use of chemical weapons were not very impressive. Some limited, direct effects against poorly protected Iranian forces were indeed observed. But more important were the indirect effects. The psychological

impact upon the Iranian forces in the final stages of the war is considered to have been significant and to have influenced the morale of the Iranian combat forces.

There is serious concern that the interest in chemical weapons, as a consequence of the relative success of Iraq's use of chemical weapons, is growing again after the Iran-Iraq war. During the Paris Conference in 1989, some States even argued that the acquisition of chemical weapons was necessitated as deterrence against nuclear weapons. This was not reflected in the final declaration, but the matter was a hot issue during the Conference.

During the Gulf War, there was widespread concern among the coalition members and the states in the region that chemical weapons would come to use. This affected the planning and the deployment of forces and spread fear in the cities all over the area. With the fragmentation of the international security structures and with the growing frequency of internal, ethnically rooted conflicts, in which modern equipment and protection are not readily available, chemical weapons may have something of a renaissance. This is deeply regrettable as those who now praise chemical weapons as the poor man's bomb overlook the fact that these weapons are only effective as terror-means against unprotected civilian populations and against poorly equipped military forces. The poor man is indeed the first victim of the poor man's bomb.

In the new security environment, where the trend is moving away from large-scale major conflicts between well-equipped and technically advanced forces, towards regional, subregional or even internal ethnically driven military conflicts, the probability of terror warfare is growing. The ultimate terrorist weapons are indeed chemical weapons and possibly biological weapons. This development makes a complete chemical weapons ban most urgent. Time is not on the side of a ban. Delay in concluding the multilateral negotiations would risk diminishing the number of parties to the future Convention, and severely undermine its global and international scope. However, on the other side, a weak and ineffective control regime would be of little value as it would not counter the growing threat of proliferation. It would radically diminish the significance of the Convention. The dispute still continues among the negotiating parties about how stringent the special on-site inspection regime -- the challenge inspections -- should be.

If there is anything to learn from the Iraq experience, it is that only intrusive, short notice, non-refusal inspections of declared or non-declared locations of the type which the United Nations Special Commission has carried out, would be effective against deliberate concealment and deter potential violators. At a time when

the tendency towards transparency in military matters is obvious, and when the principle of absolute non-interference in internal matters has to be modified everywhere in favor of international responsibility and cooperation, the reluctance to accept the only effective tool against treaty violations seems strangely outmoded. The arguments advanced against thorough on-site inspections are the need to protect secret weapons research and sensitive installations against inspection visits. It is incomprehensible that procedures could not be outlined which would make it possible for international chemical weapons inspectors, dispatched by a multilateral verification agency, to carry out their tasks in full without in any way compromising non-chemical weapons activities and items. Modern chemical weapons verification methods and means as applied by the Special Commission, for instance, are sophisticated enough to discriminate between what is chemical weapons relevant and what is not.

The IAEA safeguards which serve as a sort of verification regime for the Nuclear Non-Proliferation Treaty have functioned brilliantly as a cooperative and confidence-building arrangement for states united in their wish to prevent nuclear proliferation. But when Iraq, a party to the Treaty, decided to violate obligations and secretly embark upon a nuclear weapons development program, the absence of an effective special inspections regime made disclosure of this violation impossible within the existing control system. The nuclear safeguards are neither designed nor able to cope with outright violations. The effect could be that demands could be raised for the establishment, outside the treaty, of a politically based, non-proliferation regime. As a general rule, if too weak a control regime is established, measures sooner or later have to be taken to complement such a regime.

As regards chemical weapons, it would be politically quite naive to believe that the Iraqi Government happens to be the only agency, the only government, working on chemical weapons capability. Other governments and government-funded terror-organizations can today fully engage in acquiring chemical weapons. It would be a great and growing mistake to ignore the chemical threat. Indeed, the Chemical Weapons Convention should be the proud manifestation of the international community outlawing once and for all chemical weapons. But the tools for that, the Organization for the Prohibition of Chemical Weapons and the cooperation and control regime, should be designed in such a way that any effort to violate the provisions could be exposed and halted. The Convention must be an effective instrument for the elimination of chemical weapons once and for all. ■

Adapted from a presentation by the author at the international seminar OPCW: The First Five Years, The Hague, 8 May 1992.

What follows is taken from the Sussex-Harvard rolling CBW chronology. The intervals covered in successive Bulletins have a one-month overlap in order to accommodate late-received information. The basic chronology, which is continuously updated, is fuller and provides complete citations of sources. For access to it, apply to Julian Perry Robinson at the Science Policy Research Unit, University of Sussex, Brighton, BN1 9RF, England.

1 February President Yeltsin, during his talks with President Bush at Camp David, pledges to halt Russian research into biological weapons [see also 29 Jan and 31 Jan], according to senior adviser Dmitri Volkogonov speaking to the press after the meeting. Reporting him, the *Washington Post* writes of this Russian BW research as "an area where he suggested past military efforts had crossed the line set out by international treaties". The *Post* continues: "He said Yeltsin disclosed that 'a number of centers and a number of programs dealing with this issue have been closed', and said that 'from 1992 [forward], there will be no [military] budget allocations coming to that program'". {WP 2 Feb} [See also 23 Nov 91, 13 Jan and 15 Jan]

3 February In Moscow, the Chief of the Chemical Troops of the CIS Joint Armed Forces, Colonel General Stanislav Petrov, speaking to the press about the chemdemil program [see 27 Jan and 29 Jan], says that the two-year-old draft for the projected USSR state program, currently under examination in the Russian Federation Supreme Soviet, needs amendment, above all so as to create a state commission responsible for choosing locations for the requisite chemdemil facilities. He also urges the signing of an intergovernmental agreement (between the Republics) on the sharing of the material and financial expenditures that will be involved. {TASS 3 Feb in FBIS-SOV 4 Feb}

3 February From Kurgan, in Russia, comes a broadcast report summarizing public health and other ecological concerns recently expressed about 123 tons of "extremely toxic chemicals" that had been buried during the early 1970s in marshy woods on the border of Sverdlovsk and Kurgan oblasts by soldiers from the former Urals Military District. {Radio Rossii 3 Feb in FBIS-SOV 5 Feb}

3 February Russian Deputy Prime Minister Yegor Gaydar tells a press conference in Moscow that the Russian Government is setting up a special body for political control over arms exports [see 29 Jan]. The body will include the heads of foreign policy, industry, economics, finance and security departments. {Radio Rossii 3 Feb in FBIS-SOV 4 Feb}

3 February In Mozambique, a RENAMO deserter states at a news conference in Maputo that the chemical attack which had reportedly been mounted against government forces some three weeks previously [see 28 Jan] had been organized by 50 soldiers specially trained at Phalaborwa camp in the Transvaal and supplied with oxygen masks and "poison filled" munitions that could be fired from a gun. He says, too, that they had been intending to conduct further chemical attacks against four Maputo suburbs. {Capital Radio 3 Feb

and Radio Maputo 3 Feb in FBIS-AFR 5 Feb}

4 February The Moscow newspaper *Pravda* publishes particulars of the scientific research institute established two decades previously at Obolensk, near Moscow, to work on infectious diseases. Obolensk, it reports, has just joined, as the youngest member, the new "alliance of science cities" alongside "Zhukovskiy, Kaliningrad, Pushchino, Protvino and many others". The institute does work on biomedical means of protection against BW, on which its director, Doctor of Medicine Nikolay Inokentovich Urakov, is quoted as follows: "Many kinds of bacteriological weapons are known that are based on pathogens of particularly dangerous infections. There are countries where they secretly perform research in this area. Unfortunately the events of recent years have shown that these countries are not averse to demonstrating their armor. But this does not mean that our country, in violation of the Geneva Convention, must develop weapons of mass destruction. But we are obligated to have effective biological medicines and vaccines against them. Until quite recently, our country and our institute in particular could be proud of the results of their research." Diseases mentioned in the article include not only anthrax, plague and tularemia but also legionnaires disease. The institute is now looking to private enterprise for survival: "to avoid unemployment and destitution at a time of raging inflation, the scientists in Obolensk [have] established ten small enterprises for the production of medicines that are in very short supply". {*Pravda* 4 Feb in JPRS-TAC 9 Mar}

5 February In Iraq, the seventh UN chemical inspection [see 27 Jan], UNSCOM 26, comes to an end. Speaking to reporters, Chief Inspector Jopp subsequently says that, although German companies had, like other Western firms, been directly involved in the Iraqi CW-weapons production program, "there had been no participation whatsoever of the German chemical industry", only of German construction firms. {FAZ 14 Feb}

5 February The UN Security Council conducts its bimonthly review of the UN embargo against Iraq and decides to retain economic sanctions, its president (US Representative Thomas Pickering) issuing a statement on behalf of the Council {S/23517} which refers to, among other things, "serious evidence of Iraqi non-compliance over its programs for weapons of mass destruction". {WP & WT 6 Feb}

The Council had had before it the factual report {S/23514} which it had earlier requested from the UN Secretary-General "on Iraq's compliance with all the obligations placed upon it by resolution 687 (1991) and subsequent relevant resolutions". This report described Iraq's failure to provide

full, final and complete disclosure of all aspects of its programs to develop weapons of mass destruction (disclosure that is required by resolution 707 [see 15 Aug 91]). It also described Iraq's failure to accept its obligations (required by resolution 715 [see 11 Oct 91]) in respect of ongoing monitoring and verification of compliance with its undertaking not to re-embark upon any such programs in the future [see 27 Jan]. It chronicled Iraq's continuing efforts to conceal the extent of its clandestine nuclear program, and noted that, whereas Iraq was known to have possessed ten different types of CW munition in its stockpile, UNSCOM inspectors had so far been able to find the plant used for making but two of them. {NYT & WP 5 Feb}

The Council had also had before it a report submitted by Iraq presenting "a comprehensive review of the measures implemented by Iraq pursuant to Security Council resolution 687 (1991)." This places in the public domain for the first time details of Iraq's declarations thus far to the UN about its CBW programs. {S/23472}

5 February In Washington officials say that Robert Gallucci, currently UNSCOM Deputy Chairman, is to be named to a senior State Department post, with Michael Newlin, former US ambassador to the IAEA, replacing him at UNSCOM. {WP 5 Feb}

5 February In the US Senate, Under Secretary of State Reginald Bartholomew and Assistant Secretary of Defense Stephen Hadley testify before the Armed Services Committee on their recent visit to the former Soviet Union [see 15-22 Jan] {Prepared testimony}. Chemical weapons had not been a primary focus of the mission, though Secretary Hadley observes that "there is an opportunity to use the [Nunn-Lugar] funds" for chemdemil.

Responding to a question about one of the preconditions for release of Nunn-Lugar funds, namely Presidential certification that recipients are in compliance with the 1972 Biological Weapons Convention, Secretary Bartholomew recalls that, in each successive Arms Control Compliance Report filed with the Congress [see 15 Feb 91], the administration had stated its view that the Soviet Union was conducting an

offensive biological-weapons program in violation of the treaty; and he says that the administration had continued to raise the matter directly with the USSR. He adds: "one of the things that we hope may have changed is that we may get some affirmative responses out of Yeltsin and his team, and we are pursuing it" [see also 1 Feb]. {Federal Information Systems Corporation transcript}

6 February The CD finally achieves consensus on agreeing to the requests from 39 non-member states to participate in the work of the Conference and its subsidiary bodies. {CD/PV.610}

South Africa, for the first time, is among them. Nigeria states the following: "There is every reason to believe that South Africa possesses chemical weapons. There must be an assurance that as an Observer, they will not only contribute constructively towards elaborating the Convention but also recognize the paramount need for universality. For that reason, my delegation will not block consensus this time around, as all potential violators should be brought into the negotiating process." {CD/PV.610}

6 February The outgoing chairman of the Ad Hoc Committee on Chemical Weapons, Ambassador Batsanov of Russia, presents to the CD his final report [see 20 Jan], with its new draft CWC. He says, having done so: "The time has come in the negotiations to separate the primary from the secondary, the priority tasks from issues which can be put off to a later time without harm to our goal or to one's positions, to separate real from fancied interests and real concerns from bargaining chips.... I venture to express the view that at this stage special attention and efforts are demanded by such issues as challenge inspections, verification in commercial industry, the future of export control measures, the composition of the executive council and the problem of so-called 'old' chemical weapons." {CD/PV.610}

7 February The text of the Mendoza Commitment, signed by Argentina, Brazil and Chile [see 5 Sep 91], is transmitted to the CD together with the information that, in addition to Uruguay and Bolivia [see 12 Nov 91], Paraguay has acceded

GLOSSARY OF ABBREVIATIONS FOR NEWS CHRONOLOGY

ACR	<i>Arms Control Reporter</i>	DPA	Deutsche Presse Agentur	KZ	<i>Krasnaya Zvezda</i>
ACT	<i>Arms Control Today</i>	DTel	<i>Daily Telegraph</i> (London)	MN	<i>Moscow News</i>
BBC-SWB	<i>BBC-Summary of World Broadcasts</i>	DW	<i>Defense Week</i>	NJ	<i>National Journal</i>
CBW	Chemical/biological warfare	FAZ	<i>Frankfurter Allgemeine Zeitung</i>	NYT	<i>New York Times</i>
CD	Conference on Disarmament	FBIS	Foreign Broadcast Information Service (Washington)	Obs	<i>Observer</i> (London)
CD/	CD document	FedR	<i>Federal Register</i> (Washington)	S/	UN Security Council document
C&EN	<i>Chemical & Engineering News</i>	FR	<i>Frankfurter Rundschau</i>	ST	<i>Sunday Times</i> (London)
CN	<i>Current News Early Bird</i>	FT	<i>Financial Times</i> (London)	SZ	<i>Süddeutsche Zeitung</i>
CQ	<i>Congressional Quarterly (Weekly Report)</i>	Guar	<i>Guardian</i> (London)	TL	<i>Times</i> (London)
CR	<i>Congressional Record</i>	IHT	<i>International Herald Tribune</i>	Tag	<i>Tageszeitung</i> (West Berlin)
CW	Chemical warfare	Ind	<i>Independent</i> (London)	STel	<i>Sunday Telegraph</i> (London)
DD	<i>Defense Daily</i>	ITA	<i>Inside the Army</i>	UNDN	UN Disarmament Newsletter
DerS	<i>Der Spiegel</i>	ITAF	<i>Inside the Air Force</i>	WP	<i>Washington Post</i>
DN	<i>Defense News</i>	JPRS	Joint Publications Research Service (Washington)	WT	<i>Washington Times</i>
				WSJ	<i>Wall Street Journal</i>

to the agreement. {CD/1126}

8 February In Chicago, the American Association for the Advancement of Science presents its Hilliard Roderick Prize in Science, Arms Control and International Security jointly to Robert P Mikulak of the US Arms Control & Disarmament Agency and Will D Carpenter, Vice-President for Technology at the Monsanto Agricultural Company, citing "their tireless efforts to overcome the technical and diplomatic obstacles to international agreements on chemical weapons". {AAAS news release 14 Jan}

10 February In Washington, *Defense Week* reports further slippage in the schedule and growth in the estimated costs of the US chemdemil program [see 20 Nov 91]. Attributing unidentified Army and Congressional sources, it reports that the tentative completion date is now 2000 for a total cost of at least \$7500 million. {DW 10 Feb}

11 February In Azad Kashmir, Pakistani troops use tear gas to prevent a march of hundreds of Kashmiris organized by the Jammu and Kashmir Liberation Front from crossing the border into India [see also 5 Apr 91]. Concealed Indian troops on the far side of the border are reportedly under orders to shoot anybody crossing over. {TL 12 Feb}

11 February A US General Accounting Office report is released by its requester, Senator Glenn, critical of the Army's BW vaccine program, in particular the failure of the contract work at the Salk Institute's Swiftwater facility to provide vaccines for *Desert Storm/Shield*. The report draws attention to its observation that only 17 percent of Army payments to Salk under its 1988 contract had been spent on work clearly related to biological agents validated by the Armed Forces Medical Intelligence Center as BW threat agents -- agents assessed by the intelligence community as actually being developed or produced for weapons use. {GAO/NSIAD-92-33; *Philadelphia Inquirer* 12 Feb; DD 12 Feb; DW 18 Feb}

12 February Russian Foreign Minister Andrey Kozyrev addresses the CD in Geneva. He says that completion of the CWC is the most important and urgent task facing the Conference. He advocates the conversion of former chemical weapons production facilities rather than their complete destruction. He speaks of the problems of eliminating the 40,000 tonnes of toxic agents in Russia [see 30 Sep 91]. He says that, although his country has the requisite technology at its disposal, "international cooperation and some help from abroad could...be instrumental in guaranteeing the ecological cleanness of the destruction process and in creating incentives among the local population for having such facilities nearby". {CD/PV.611}

12 February Germany informs the CD that, like Norway [see 6 Jun 91], it will be following the example of Finland and offering a training course in CWC verification methods. Specifically, it will be providing a two-week course in analytical chemistry, conceived as a complementary follow-up to the Finnish course [see 13 Dec 91], at Munster during 1-12 June. {CD/PV.611}

12 February The Netherlands informs the CD that it will be convening an international seminar -- *OPCW, the First Five*

Years -- to be held in The Hague during 8-9 May 1992 -- on practical aspects of the implementation of the CWC in its early years. It also announces that, during the second half of June, it will be organizing a training program, somewhat similar to the German one, for about 10 chemistry graduates from developing countries. {CD/PV.611}

13 February Austria reiterates in the CD plenary its offer to host the projected CWC international organization and invites all delegations of CD member states to a two-day visit to Vienna. {CD/PV.612}

A similar trip had been made by CD ambassadors to The Hague in August 1991.

14 February In Germany, the Bundesrat passes the legislation which the Bundestag adopted three weeks previously [see 23 Jan] amending German export laws and establishing a federal agency to monitor exports. {FAZ 14 Feb; BD 14 Feb; WSJ 18 Feb}

15 February In Johannesburg the South African Defense Force issues a communiqué about the reports of RENAMO chemical warfare in Mozambique [see 3 Feb] {Radio Mozambique 19 Feb in FBIS-AFR 20 Feb}. The communiqué refers to the investigation made in Mozambique by a South African team during 22-24 January [see 22 Jan]: the team had interviewed four victims of the alleged attack and carried out autopsies on two of the dead. The conclusion was that, although there was reason to suspect that an "unusual incident" did in fact occur, there was no evidence of chemical weapons having been used: "The patients described a variety of strange symptoms, but these do not fit the picture of any known chemical agent. At the time of the examination, no patient or corpse showed signs attributable to known chemical exposure. Although chemical exposure cannot be excluded, it can also not be confirmed from the evidence seen."

The communiqué also states that the South African Defense Force does not have chemical weapons, adding: "The SADF has, however, studied the subject of chemical and biological warfare to be able to act defensively against such weapons should it ever be necessary." {SAPA 15 Feb in BBC-SWB 17 Feb}

Four days later, however, the Chief of Staff of Mozambican Armed Forces states that medical tests carried out in Maputo on the soldiers affected showed that they had been poisoned by "a violent chemical agent which affects the nervous system in particular". {Radio Mozambique 20 Feb in BBC-SWB 21 Feb}

17 February In Moscow, following talks in Frankfurt between US Secretary of State James Baker and German Foreign Minister Hans-Dietrich Genscher, Russia, Germany and the United States announce plans to create an international science and technology institute that will employ former Soviet weapons scientists and engineers so as to give them "opportunities to redirect their talents to nonmilitary endeavors" and to "minimize any incentives to engage in activities that would result in proliferation of nuclear, biological and chemical weapons and missile delivery systems". The institute, originally proposed by Germany some weeks previously {UNDN April}, will be "a clearinghouse for developing, selecting, funding and monitoring projects that would be carried

out primarily at institutions and facilities located in the Russian federation and other interested Commonwealth states". The United States is to provide \$25 million, which will come from the \$400 million fund established by the Nunn-Lugar Act [see 25 Nov 91 and 15-22 Jan]. Germany pledges to push for backing from the European Community. {IHT 18 Feb; DN 24 Feb; *State Department Dispatch* 24 Feb}

A similar center, independent of the Moscow one but co-operating with it, is to be created in Ukraine, according to a US government announcement some six weeks later. The US is to contribute \$10 million towards it. {C&EN 13 Apr}

17 February In the United States, officials of the National Security Council are reportedly coordinating the development of a new strategy that would use 'non-lethal warfare' [see 13 Nov 91] as an adjunct to conventional and nuclear war {DN 17 Feb 91}. Lobbying vigorously in support of the strategy from outside government is the US Global Strategy Council, a Washington-based think-tank chaired by Ray Cline, a former deputy director of the CIA. The underlying idea -- new only in the seriousness with which it is now apparently being pursued -- is that of disabling enemy weapon platforms, communication centers and the like without necessarily killing soldiers or civilians or causing other collateral damage. *Defense News* reports that the participants include the Defense Advanced Research Projects Agency (DARPA), the Defense Department Policy Planning Staff, the Directorate of Defense Research & Engineering, and the operations and planning staffs of the Service Chiefs. It also reports that the Defense Department is considering the inclusion of a preliminary technology-development effort, funded at about \$148 million, in its five-year budget plan.

Inside the Army later reports that a US Army Training and Doctrine Commands *Airland Operations* concept paper of 1 August 1991 had defined 'non-lethal technologies' as "technologies with potential for development into weaponry that can disable or destroy an enemy's capability without causing significant injury, excessive property destruction, or widespread environmental damage" {ITA 24 Feb}. As examples, the concept-paper had listed: "low-energy lasers to temporarily blind people, infrasound waves to temporarily disorient and incapacitate people, and chemical agents that would change the molecular structure of base metals or alloys on critical aircraft, ships, trucks, or armored vehicles" {NJ 28 Mar}. Although that rendering of the Army concept of 'non-lethal warfare' had made no mention of antipersonnel chemical agents, it seems that the same cannot be said for a study reportedly nearing completion within the J-3 (Operations) directorate of the Joint Chiefs of Staff: *Defense News* states that this study "is examining how critical non-lethal battlefield technologies such as blinding lasers, chemical immobilizers, infrasound, non-nuclear electromagnetic pulse and relaxants could be used for immobilizing tactical systems, for denying the enemy's ability to wage offensive war and for selective destruction of strategic targets". What *Defense News* describes as a "tandem effort" to this J-3 study, conducted by the planning staff of Under Secretary of Defense (Policy) Paul Wolfowitz, is shortly to be presented to the Secretary of Defense: the report of a Non-Lethal Warfare Study Group, chaired by Paul Wolfowitz, established by Defense Secretary Cheney in March 1991 {NJ 28 Mar}.

As for the 'non-lethal technologies' that are already being studied actively, *Defense News* subsequently reports that

those "in various stages of development by DARPA and the Lawrence Livermore and Los Alamos national laboratories include blinding lasers, traction inhibitors, chemical immobilizers, entanglement munitions to disable aircraft and ship propellers and tank treads". Its report continues: "Other technologies under development include neural inhibitors to temporarily incapacitate personnel, infrasound to disorient people and non-nuclear electromagnetic pulses to deactivate enemy electronics". And it quotes the 30 March 1991 mandate of the Defense Planning Staff study as stating that a US lead in 'non-lethal technologies' "will increase our options and reinforce our position in the post-Cold War world". {DN 2 Mar}

A US Army officer is quoted as expressing it, the new technologies "might allow us to take action where we haven't been able to take action before". {DN 17 Feb}

18 February China submits to the CD a paper entitled "Some information on discovered chemical weapons abandoned in China by a foreign State" [see also 4 Nov 91]. The paper states that "direct victims alone" from these abandoned weapons exceed 2000 people, according to "preliminary statistics". Locations are stated for 18 dump sites and six other suspected sites in different parts of Anhui, Hebei, Heilongjiang, Jiangsu, Jilin, Liaoning, Shanxi and Zhejiang Provinces and in the Inner Mongolia Autonomous Region; more than 300,000 chemical munitions and 120 tons of bulk CW agent have so far been recovered from these sites and destroyed or given preliminary treatment by China; remaining buried may be another two million chemical munitions, including the 1.8 million rounds which historical records suggest may have been abandoned in the Dunhua region of Jilin Province. The CW agents involved are reported to be: mustard, mustard/lewisite, diphenylcyanoarsine, hydrogen cyanide, phosgene and chloroacetophenone [for which the US designations are H, HL, DC, AC, CG and CN, respectively]. The munitions are: 150mm shell (HL and DC fills), 105mm shell (HL and DC fills), 90mm mortar rounds (HL and DC fills), 75mm shell (CG and DC fills), aircraft bombs, 81mm mortar rounds and chemical munitions of other calibres, as well as toxic-smoke candles and canisters. {CD/1127}

Two days later China formally proposes to the CD that the CWC should clearly establish "the principle that the State which used and abandoned chemical weapons shall bear the responsibility for undoing the consequences of such uses and for destroying the chemical weapons it abandoned"; and it puts forward detailed language to that end for inclusion in the draft CWC. The proposal observes that because the issue of abandoned chemical weapons is "inherently related to definitions of chemical weapons as well as provisions on their use, declaration, destruction, verification, sanctions and cooperation" it should be "dealt with in a balanced, reasonable and integrated way". {CD/1130; CD/PV.614}

18 February The US Army is to establish a new agency, the Chemical Materiel Destruction Agency, so it is reported in *Defense Week*. The new agency will merge the Program Manager for Chemical Demilitarization (PMCD) with a new Program Manager for clean-up of 'non-stockpile materiel' for whom there is an FY 1993 budget request of \$3-4 million to fund, according to the Army, "a lot of historical researching to define the entire program".

The background is as follows. Some 16 months previously, a House Appropriations Committee report had noted that

the PMCD had responsibility for destroying only those items that had been identified in 1986 as part of the Chemical Stockpile Disposal Program, the report continuing: "Not included are a host of lethal wastes from past disposal efforts, unserviceable munitions, chemically contaminated containers, chemical production facilities, subsequently located chemical munitions, sites known to contain significant concentrations of buried chemical weapons and waste, and binary weapons and components." The Committee had therefore directed the Defense Department to rest overall responsibility for all such chemdemil and other CW waste-disposal within a single office {House Report 101-822}. In its report, a year later, on the FY 1992 Defense Appropriations bill, the Committee had reminded the Department of this direction {DW 18 Feb}.

The new agency, to be headquartered at Aberdeen Proving Ground, will also advise Russia on the destruction of the former Soviet CW stockpile, so it is later reported. {C&EN 2 Mar}

19 February The Korean *Agreement on Reconciliation, Non-aggression and Exchanges and Cooperation between the South and the North* [see 13 Dec 91] enters into force. Under Article 12, a South-North Joint Military Commission is to be established within three months, tasked to discuss and carry out confidence-building and arms-reduction measures, including "the elimination of weapons of mass destruction... and verification thereof". {CD/1147}

19 February The UN Security Council authorizes the dispatch to Iraq of a special mission "to meet and discuss with the highest levels of the Iraqi Government for the purpose of securing the unconditional agreement by Iraq to implement all its relevant obligations under resolutions 687 (1991), 707 (1991) and 715 (1991)" [see 5 Feb]. {S/23609}

The Security Council had had before it a special report by the Executive Chairman of UNSCOM explaining why Iraqi acceptance of resolutions 707 and 715 was essential if the disarmament provisions of ceasefire resolution 687 were to be implemented satisfactorily {S/23606}. In regard to CBW weapons, the report illustrated the uncertainties still confronting UNSCOM in the following terms: "An example of Iraq's failure [to provide a proper accounting of its weapons-of-mass-destruction programs] is to be found in Iraq's insistence that its chemical weapons production did not start until 1984, when the United Nations itself concluded that Iraq had used chemical weapons against Iran in 1983. Given that Iraq also consistently claims that all its chemical weapons were produced indigenously, this completely undermines the credibility of the figures that Iraq has given for chemical weapons production and use and the material balance that it has provided to the Special Commission. Furthermore, neither documentary nor complete physical supporting evidence has been provided for Iraqi responses to questions concerning the import or production of chemical weapons, chemical warfare agents, related subsystems and production facilities, equipment, etc. In relation to biological weapons, Iraq clearly violated its obligations to hand over to the Commission all its biological weapons-related items when it destroyed buildings at Salman Pak immediately prior to the first Commission inspection there. Explanations provided to date, including those given most recently to the special mission [see 27 Jan], have not been convincing."

The Council warns Iraq of the "serious consequences" it

will face if it does not improve its cooperation; and there are press rumors of preparations for renewed military action against Iraq. The special mission is to be led by the Executive Chairman of UNSCOM, Ambassador Rolf Ekéus. It will coincide with two regular UNSCOM missions to Iraq, one of them tasked to destroy equipment used in the Iraqi ballistic missile program, the other to destroy in situ some hundreds of nerve-gas rockets considered too dangerous to move to the destruction facility being established at Muthanna [see 3 Nov 91]. {WP 19 Feb; NYT 20 Feb}

19 February In Russia, President Yeltsin issues an *ukase* creating a committee under his auspices to "deal with convention-related problems of chemical and biological weapons". The committee is to be chaired by Anatoliy Demyanovich Kuntsevich [see 30 Jun - 4 Jul 88], who, within one month, is to submit for approval a charter for the committee and its organization. The committee in its work on resolving CBW treaty problems is required to "establish the international and internal controls" to prevent the development, production and stockpiling of CBW weapons, and to organize the destruction of stockpiles of chemical weapons. {Rossiyskaya Gazeta 28 Feb in BBC-SWB 29 Feb}

19 February In the US Congress, the Office of Technology Assessment convenes a meeting of its Advisory Panel on Proliferation of Weapons of Mass Destruction.

20 February German Foreign Minister Hans-Dietrich Genscher addresses the CD in Geneva. On the appointment of the leader of the German CD delegation, Ambassador von Wagner, to the chairmanship of the Ad Hoc Committee on Chemical Weapons [see 23 Jan], he says: "Germany takes this responsibility very seriously and we will do all in our power to bring the negotiations to a punctual and successful conclusion". Speaking of the controls which the CWC must place upon the civilian chemical industry, he says: "Naturally, such verification measures, being so new, cannot function perfectly from the outset. The task of the future Chemical Weapons Organization and its technical secretariat will be to gradually develop verification procedures that work to the satisfaction of all member States". He welcomes the offer of President Mitterrand of France to hold a signature conference for the CWC in Paris before the end of the year. {CD/PV. 613}

20 February Australia submits to the CD a report on the multilateral trial inspection conducted during the Regional Initiative workshop in Melbourne six months previously [see 26-30 Aug 91] at a civil-industry facility producing triethanolamine. {CD/1128}

Australia also submits to the CD a paper {CD/1129} outlining the methodology being used by its National Secretariat (which is the nucleus of the future Australian National Authority under the CWC) for its survey of the country's chemical industry. {CD/PV.613}

21 February In Iraq, a team of United Nations experts arrives to start the work of destroying CW munitions too damaged to move to the central destruction facilities at Muthanna [see 19 Feb]. It is to begin at Khamasiyah, near the southern town of Nassiriya. The 26-person team, UNSCOM 29, is led by Michel Desgranges of France, who later reports

that relations with Iraqis are "normal and reasonable"; this had not been the experience of the UNSCOM ballistic-missile team, which had been withdrawn from the country on 29 February after Iraqi refusal to allow it to destroy missile-related material. Michel Desgranges reportedly hopes to complete his mission by mid-March. {Ind 21 Feb; IHT 4 Mar}

21 February Germany will not, after all, participate in the construction of the projected pesticide factory at Qazvin, Iran [see 18 Nov 91], according to Economics Minister Jürgen Möllemann in an interview published in *Die Zeit*. The minister, recently in Tehran, reportedly said: "I announced that there were considerable reservations about the planned chemical plant in Gadwin [*sic*] and that we are in the middle of a process of coordination with our partners in the so-called Australia Group, which controls the transfer of chemical plants. This process of coordination is completed. Iran has been informed that the supply of parts to this factory is...out of the question." {DZ 21 Feb in *German Tribune* 28 Feb & in FBIS-WEU 24 Feb}

21 February In Germany, Defense Ministry State-Secretary Ottfried Hennig announces upon his return from Kaliningrad that Admiral Yegorov of the Russian Baltic Fleet has agreed to a plan for a common search for CW munitions dumped in the Baltic after the Second World War [see 29 Jan]. {Deutschlandfunk 21 Feb in BBC-SWB 24 Feb} A Russian press report speaks later of almost 400,000 tonnes of German CW munitions having been sunk there after the war. {TASS 28 Feb in FBIS-SOV 4 Mar}

In Copenhagen, Danish Environment Minister Per Stig Möller announces that in principle he favors the clearing of these munitions -- amounting to some 250,000 tonnes, he says -- from the Baltic if it could be done without danger to lives. {SZ 28 Feb}

The Baltic Fleet subsequently warns of the dangers of "interference in the natural process of the chemical ammunition's breakdown", referring to studies undertaken by the Fleet's 28th Chemical Laboratory during January 1983 through July 1984. On the original dumping it says: "The decision to submerge the war gases from Germany's depots was made by the anti-Hitler coalition countries and carried out in the 1945-1946 period under the leadership of the USSR Armed Forces General Staff. The Baltic Fleet's participation in the operation was limited to determining the sites for submersion and to navigational backup. The archives of the Baltic Fleet and the Navy do not contain documents on the organization of the burial, its precise coordinates, or the quantity of chemical ammunition submerged." {KZ 18 Mar in FBIS-SOV 26 Mar}

22 February In Kazakhstan, a juridical document on the elimination of the former USSR BW test facilities in the Aral Sea, on Vozrozhdeniye Island [see 13 Jan], is being drafted by the authorities in consultation with the government of neighboring Karakalpakia, in Uzbekistan, which has jurisdiction over the island itself. {*Rossiyskaya Gazeta* 22 Feb in FBIS-SOV 28 Feb} The headquarters of the facility are located, not on the island, but in Aralsk, on the Kazakh mainland. {*Delovoy Mir* 28 Mar in JPRS-TAC 8 May}

24 February The Sultan of Oman issues a decree whereby Oman agrees to join the Biological Weapons Convention.

{WAKH 24 Feb in BBC-SWB 26 Feb}

24 February In Belgium it is announced that the country's 1987 offer to host the CWC international organization will not be renewed, but interest in hosting the signing conference for the CWC continues. Foreign Minister Eyskens has reportedly budgetted BFr 5 million to organize the signing of the treaty in Ypres [see also 20 Feb]. {*Het Laatste Nieuws* 24 Feb}

24 February Forty-one states have by now been admitted to the CD as participating non-members for the 1992 session. They include all but Angola, Bangladesh and the United Arab Emirates of the 37 1991 observers, with, besides South Africa [see 6 Feb], Bolivia, Ecuador, Panama, Singapore, Thailand and Ukraine as new observers. {CD/INF.28/Add.1} Russia has taken over the former Soviet seat.

24 February Hungary, for the third successive year [see 20 Feb 91], presents to the CD a declaration of data on its production and consumption, import and export, of chemicals on the draft-CWC control-schedules. {CD/1135; CD/PV. 614}

26 February In the US Congress, Army Chief of Staff General Gordon R Sullivan testifies as follows before the House Armed Services Committee: "The Army of today is working to reduce its chemical arsenal and foster cooperative efforts with other nations. As the service that maintains responsibility for all the US chemical stockpile, the Army pursues the US goal of achieving a global and effectively verifiable chemical weapons (CW) ban. During 1990-91, the Army hosted visits by Soviet representatives to several US CW storage, production and demilitarization sites and provided the data on the US CW stockpile for exchange with the USSR. The Army is preparing for additional site inspections, exchanging more detailed CW data with the Commonwealth of Independent States, and developing a standardized training program for foreign national CW inspectors and their US escorts." He repeats this testimony a week later before the Senate Defense Appropriations Subcommittee. {Prepared testimony}

27 February In Nagorno-Karabakh, where the Armenian-Azeri conflict is intensifying, the alleged existence of a former Soviet CW-weapons dump near the Turkish border is said, on Moscow television, to be impeding the decision by the CIS military leadership about withdrawing its troops from the Transcaucasus {Moscow Television 27 Feb in FBIS-SOV 2 Mar}. However, a spokesman for the CIS Armed Forces subsequently states that there are no former Soviet CW weapons in the region {TASS 28 Feb in FBIS-SOV 28 Feb}. According to Russian news-reporting, the primary storage facilities for former Soviet CW weapons -- all of which are officially stated to be on Russian territory -- are in the Saratov region and in Udmurtiya, although production, terminated in 1987, had been under way in several republics.

General Igor Yevstafyev [see 13 Dec 91], identified as a deputy chief of the Chemical Troops of the CIS Combined Armed Forces, suggests later on Radio Moscow that the fears of CW in the Armenian-Azeri conflict might have arisen because of the presence there of chemical irritants; such agents, he says, would have had to be imported from abroad since the regular troops themselves are not supplied with

them. He also speaks, however, of the chloropicrin that is in wide issue to chemical defense units as a training agent [see also 24 May and 13 Dec 89]. {Radio Moscow 4 Mar in FBIS-SOV 5 Mar}

27 February Czechoslovakia submits to the CD a rather detailed list of antichemical protective items it has available, including items available for sale. It explains that the list is intended as an example of the data-submissions that CWC states parties might make as contribution to the data-bank on antichemical protection which, under Art X.4 as currently drafted, the OPCW Technical Secretariat will be required to establish within 180 days of the CWC entering into force. It invites other CD delegations to follow its example. {CD/1136; CD/PV.617}

27 February Chile informs the CD that it has now withdrawn its Geneva-Protocol reservations [see 4 Sep 91] and has notified the Depository accordingly. {CD/PV.614}

27 February Japan responds at the CD to the Chinese proposal regarding responsibility for abandoned CW weapons [see 18 Feb], reiterating its position that any state party encountering such weapons on its territory should have "primary concern" for their destruction, given, not least, the purely practical considerations, and given, also, the possibility of the abandoning state not being a party to the CWC. Japanese CD Ambassador Donowaki expresses support for the consultations which Ambassador Brotodiningrat of Indonesia has been conducting on the issue as Friend of the Chair, and he recommends that the treaty should allow the abandoning state to cooperate in the destruction, should the discovering state so wish. The actual form of any such cooperation should be a matter, not for the CD, however, but for bilateral discussion. He speaks of the "honest and serious efforts" which Japan has already been making bilaterally. {CD/PV.614}

27 February The UN Security Council considers the report from its special envoy just returned from Baghdad, Ambassador Rolf Ekéus [see 19 Feb]. The report {S/23643} indicated that Iraq would be willing to cooperate in the weapons-elimination and long-term compliance monitoring (which it now accepted in principle {S/23636}) only if the Security Council started to lift its economic sanctions against Iraq. The Security Council issues a strongly condemnatory statement which asks Iraq to send a delegation to New York to explain its position "without further delay" and says that the Council will return to the issue no later than the week beginning 9 March {S/23663; NYT 29 Feb; FT 29 Feb-1 Mar; Ind 1 Mar}. The Iraqi Foreign Ministry reacts with a statement characterizing the UN Security Council as a tool of the United States; and Deputy Prime Minister Tariq Aziz later suggests that the UNSCOM elimination and monitoring plans are an attempt to wreck Iraqi manufacturing industry. Iraq agrees, however, to send a high-level delegation to New York within the deadline. UK Foreign Minister Douglas Hurd says on television: "We do not rule out going back to military action. We are not at that point yet, but they have to understand they have to obey the United Nations." {FT & IHT 2 Mar; FT & Ind 3 Mar}

28 February The US Defense Department submits to the

Congress the report required by law on funds obligated in its CBW RDT&E programs during fiscal year 1991.

3 March France submits data to the CD on its manufacture and use of scheduled chemicals. The submission is based on a survey voluntarily conducted by the Union des Industries chimiques and reports 15 production sites and 58 processing/consumption sites for chemicals on Schedules 1, 2A and 3 of the CD/1046 draft CWC. It also states that there are no chemical weapons on French territory, no French chemical weapons on the territory of another state, and no chemical weapons production facilities. {CD/1141}

3 March On the BW programs of the former USSR [see 4, 5, 22 Feb], a February report by the US Central Intelligence Agency had spoken of a network of 16 known or suspected facilities, according to unidentified US officials reported in the *Washington Times*. The facilities are said to be both in Russia and in other CIS republics, and to include "special military-secured storage facilities" for BW weapons {WT 3 Mar}. A subsequent press report, again attributing an unidentified US official, speaks of American intelligence having detected 20 facilities devoted to research, production and storage of biological weapons {*Maine Sunday Telegram* 22 Mar in ACR p. 701.B.89; WP 17 Apr}

5 March In Moscow, *Nezavisimaya Gazeta* reports a recent estimate by Aleksandr Chernyshov, Deputy Director of the Experimental Physics Scientific Research Institute at Arzamas-16, that the 40,000 agent-tonne former Soviet CW stockpile could be destroyed in just three underground nuclear explosions. The Chetek Corporation planning for such chemdemil [see 20 Nov 91] in fact envisages some ten such explosions, he had said. {*Nezavisimaya Gazeta* 5 Mar in FBIS-SOV 5 Mar}

5 March In Tatarstan, which is part of the Russian Federation, nationalists warn that the CIS chemical weapons which are stored in the region, said to constitute the main bulk of the former Soviet CW stockpile, may be used as a means for bringing pressure to bear on Moscow in the event of Russia taking tough measures against Tatarstan. {IMA-press 6 Mar in BBC-SWB 7 Mar}

5 March Belgium, at the CD plenary, speaks in support of The Hague becoming the seat of the CWC international organization {CD/PV.615}. Canada does the same during the following week's plenary session {CD/PV.616}. So, two weeks later, does Japan {CD/PV.619}.

7 March The Moscow weekly *Poisk* publishes a further article [see 14 Dec 90] on the 1979 epidemic of anthrax in Sverdlovsk (now Yekaterinburg) [see 10 Dec 91]. It says that the projected investigation by a Russian parliamentary commission has yet to begin. The article reports interviews with the Deputy Director -- Anatoliy Mikhaylovich Lobur -- and other staff of what is now called the Center of Military Technical Problems of Biological Defense, Ministry of Defense Research Institute of Microbiology, in Yekaterinburg. The article reports on the present work of the Center, including the studies under way on microbiological methods for destroying CW agents and other such diversification away from BW-related projects. As to the anthrax outbreak, it reports

interviewees rejecting the belief now widely held in the outside community, that a discharge from the Center had been responsible, explaining their reasons, and it quotes one of them advocating expert investigation so as to remove "what are doubtlessly futile emotional gestures by the press against us". The reporter writes: "I admit that I left the installation with a different attitude than when I arrived. I regret one thing. The innuendos and the long concealment of the truth have resulted in mutually unacceptable relations between those who, to the contrary, should have the greatest trust in each other -- the residents of the surrounding area and the workers of the military scientific center." {Poisk 7 Mar in JPRS-TAC 8 May}

9 March CNN Television reports a chemical-weapons explosion in the Urals. But a Deputy Chief of the CIS Joint Armed Forces Chemical Troops, Major-General Yuriy Koryakin, denies the report and says there are no chemical-weapons stores in the Urals. The Russian Civil Defense Staff say that, on 6 March, there had been an industrial accident involving chlorine at the Solikamsk magnesium combine. {Izvestiya 11 Mar in FBIS-SOV 11 Mar}

9 March Final date for submission to the CD of offers by governments to host the CWC international organization. In the end four candidate seats are nominated: Belgrade, Geneva, The Hague and Vienna. {Ind 27 May}

11 March The Federal German Government adopts a report presented by Economics Minister Jürgen Möllemann {BMWi Nr.318 11 Mar} envisaging further [see 14 Feb] measures for strengthening export controls on dual-use technologies, including further international coordination. {ADN 11 Mar in FBIS-WEU 12 Mar; FAZ & FT 12 Mar}

11-12 March In New York, the UN Security Council meets with an Iraqi delegation led by Deputy Prime Minister Tariq Aziz to consider the question of Iraq's compliance with its ceasefire obligations [see 27 Feb]. Tariq Aziz states that all proscribed weapons had now been destroyed and that Iraq objects to the destruction of equipment that could be converted to civilian or nonproscribed production {S/PV.3059; UNDN April}. The President of the Council subsequently issues the following statement: "In the view of the Security Council the government of Iraq has not yet complied fully and unconditionally with its obligations, must do so and must immediately take the appropriate actions in this regard. It hopes that the goodwill expressed by the Deputy Prime Minister of Iraq will be matched by deeds" {WP 10 Mar; FT & NYT 11 Mar; FT, Ind & NYT 12 Mar; FT 13 Mar}. Speaking to reporters, Tariq Aziz says that Iraq intends to cooperate with the UN in the destruction of its existing weapons of mass destruction, but declines to give assurances of cooperation with the projected long-term compliance monitoring {IHT 17 Mar}.

After the Security Council meeting, an Iraqi technical team meets with UNSCOM officials. {UNDN April}

12 March In Brussels, foreign ministers of a number of European countries plus Japan, Canada and the United States discuss details of establishing the international science and technology center in Moscow [see 17 Feb]. {UNDN April}

12 March In the CD Ad Hoc Committee on Chemical Weapons, the Chairman distributes a paper reflecting his consultations on the issue of procedure for challenge inspections. The paper is in two parts -- 'The Reality' and 'The Vision' -- each setting out language for CWC Art IX paras 8 through 17, including language on the degree of mandatoriness of challenge inspections, on the role of the Executive Council throughout the challenge process, and on protection against abuse, including the information to be submitted in support of a challenge and the questions of 'filtering' and challenging-state observers. The 'reality' part of the paper represents the current negotiating situation; it is a text which includes both newly de-bracketed language and the still-controversial bracketed language, as well as newly inserted language. The 'vision' part represents the Chairman's view of a possible negotiating outcome. He proposes that the challenge-inspection consultations now move from Article IX to the Protocol on Inspection Procedures, adding: "If, after having gone through the Protocol, it turns out that 'The Vision' is not conducive to promoting consensus on the Article, it will disappear again and negotiations on the Article will continue on the basis of 'The Reality' only". {CD/CW/WP.391}

The Chairman later calls upon the people who, as Friends of the Chair, are conducting negotiations on specific outstanding issues [see 23 Jan] to submit similar 'visions' for him to integrate into a new form of Rolling Text. {CD/CW/WP.394}

12 March The Director of US Central Intelligence, Robert Gates, once again speaks publicly about the proliferation of weapons of mass destruction [see 22 Jan], this time addressing a conference in Washington, 'America's role in the Emerging World', sponsored by the Richard Nixon Library. He refers once more to Indian and Pakistani pursuit of chemical weapons. {USIS, London, Official Text 18 Mar}

13 March In Russia, the Deputy Mayor of St Petersburg, Vice-Admiral Vyacheslav Shcherbakov, announces that President Yeltsin has given approval for the mayor's office to hold talks with authorities of the Baltic countries about a possible joint investigation of the chemical-weapon dumpsites in the Baltic Sea [see 21 Feb]. Admiral Shcherbakov shows reporters a formerly secret map depicting two regions in the Baltic -- one 50 miles off Bornholm Island, the other 30 miles off the Latvian port of Liepaja -- where, according to rough calculations, at least 400,000 tonnes of explosive chemical munitions were dumped during 1946-48, and from where the munitions have since been drifting. He says that he is convening a private preparatory conference of scientists from Russia and other Baltic states on 18 March. {Radio Rossii 14 Mar in FBIS-SOV 20 Mar}

Meanwhile hitherto unpublished details about the original dumping operations have begun to appear in European newspapers, including the German Wehrmacht operations at the beginning of May 1945, the Soviet and other Allied operations during 1945-48 and the numerous, relatively small, dumpings organized by the GDR Interior Ministry during 1953-65 [see 29 Jan]. {Frankfurter Allgemeine Sonntagszeitung 1 Mar; Svenska Dagbladet 23 Mar in FBIS-WEU 13 Apr; ST (Magazine) 5 Apr}

13 March US Army Dugway Proving Ground publishes its *Final Environmental Impact Statement* in respect of its new

biological aerosol test capability [see 15-16 Jan and 19 Nov 91], now known as the Life Sciences Test Facility.

13 March In the US Congress Joint Economic Committee, there is a subcommittee hearing on counterproliferation export controls. The Assistant Secretary of State for Politico-Military Affairs, Richard A Clarke, testifies that the "US chemical and biological weapons material controls introduced unilaterally last year as part of the Enhanced Proliferation Controls Initiative [see 13 Dec 90] have been adopted or are on their way to adoption by at least 26 other countries". He describes the regulations introduced by the Administration under EPCI as follows: "[The new regulations] expanded US export controls on chemical weapons precursors and added controls on dual-use chemical and biological weapons-related equipment, including whole chemical plants that make CW precursors. In addition, under EPCI, a license is required when a US exporter knows or is informed by the US government that any export is destined to a chemical or biological weapons or missile project. Other assistance by a US 'person' -- including citizens and companies -- to such a project also requires a license. The Government now has the power to proscribe such assistance and sanction those who fail to seek a license."

He speaks about Australia Group activities, reporting that all the 22 participating states [see 10-12 Dec 91] now control all 50 precursor-chemicals on the Group's list, and that, as regards dual-use chemical equipment, "we are now in the process of nailing down agreement on equipment controls to which almost all Australia Group members have subscribed". He continues: "A year ago, the Australia Group had just scratched the surface regarding biological controls. We now have a list [of] organisms, toxins, and equipment recommended by Australia Group experts for control. We hope that this BW control list will be approved at the June 1992 Australia Group plenary." He says that "Poland, Hungary, Czechoslovakia, Romania and Bulgaria are in the process of applying [CBW-related export] controls comparable to those of the Australia Group", adding: "Israel has adopted controls on all 50 CW precursors. China has also adopted some precursor controls, as, to a lesser extent, has India." {Prepared testimony}

The Department of Commerce testifies that it will soon issue a regulation revising the US export control list to make it correspond to the "common list of equipment related to the manufacture of chemical weapons precursors" which most Australia Group participants have now agreed to control. As for the BW control list, the Department testifies that the December 1991 meeting of the Group had agreed to the idea of such a list, continuing: "The list of organisms considered for possible adoption by the AG is nearly identical to the draft proposed by the US, which was developed by the Commerce Department with experts from other US agencies and the private sector. A technical meeting of AG members is scheduled for next month to review the organism list and examine specific proposals to control equipment related to biological organisms." {Prepared testimony of James LeMunyon}

14 March In Kazakhstan, authorities announce special measures to prevent the removal of equipment from military installations on the territory of the republic, including the biological test site on Vozrozhdeniye Island [see 22 Feb]

from which soldiers had recently attempted to remove trucks and other items. {Zhas Alash 14 Mar in JPRS-TAC 17 Apr}

17 March Within the CD Ad Hoc Committee, France and the United States distribute joint papers proposing language for the challenge-inspection provisions of the draft CWC *Protocol on Inspection Procedures* [see also 15 Jul 91 and 12 Mar]. {DN 27 Apr}

17 March Poland submits a technical paper to the CD on the use of solid-phase extraction for the taking of samples requiring laboratory analysis under the CWC. {CD/1146}

18 March In Yerevan, the Armenian Defense Ministry calls for an authoritative independent commission to investigate the allegations which Azeri officials have been making that, since the beginning of March, Armenian helicopters have been dumping bags of infectious biological agents in the Kelbadzhar and other regions of Azerbaijan [see also 27 Feb]. {TASS 18 Mar in FBIS-SOV 19 Mar; *Nezavisimaya Gazeta* 17 Mar in FBIS-SOV 18 Mar}

18 March The Executive Chairman of UNSCOM, Ambassador Rolf Ekéus of Sweden, interviewed by *Arms Control Today*, says that Iraq is cooperating with UNSCOM and the IAEA at the field level but that "on the higher level, that is, on the level of the major undertakings, we see very little cooperation". Iraq has not, he continues, "politically accepted resolutions 707 [see 15 Aug 91] and 715 [see 11 Oct 91]; 707...is an amplification of the cease-fire resolution spelling out the obvious need for full, final, and complete disclosure of all its programs for development and procurement of prohibited weapons. Procurement has to do with both production and imports. And the same goes for resolution 715, which approves a plan for the ongoing monitoring and verification of Iraq's obligations not to acquire again any proscribed weapons. On that, there is no cooperation whatsoever, there is no recognition of the resolution; not even the basic, fundamental, primary declarations have been forthcoming, even if the government of Iraq recently has indicated its preparedness to make the necessary declarations." The first of these declarations had been due in November and the second one on 15 January. "However", he adds, "in connection with the Security Council meeting in March [see 11-12 Mar], a first outline for initial declarations was transmitted. The Special Commission has requested that this outline be improved to correspond to the requirements." {ACT April}

18 March In New York, at the Preparatory Committee for the UN Conference on Environment and Development, Group of 77 participants propose that nuclear, biological and chemical warfare be outlawed as a "crime against humanity and the environment" and urge comprehensive disarmament of all weapons of mass destruction. {FR 19 Mar}

19 March In Moscow, Lt-Gen Anatoly Kuntsevich, the chairman of the newly formed Committee on CBW Convention Problems [see 19 Feb], identifies in an interview the three major problems confronting the Russian chemdemil program [see 12 Feb]. *Interfax* reports them thus: "No 1 is the personnel problem as the threat of a brain drain among chemical weapons experts is far higher than that among nuclear

weapons makers. No 2 is the inadequate funding of R & D in chemical weapons elimination. To keep the chemical weapons elimination program on track, said Kuntsevich, 1.5 to 2 billion rubles is required for R & D alone in today's prices. Problem No 3 is the difficulty of agreeing on the chemical weapons elimination effort with local authorities and the public, said Kuntsevich." {Interfax 19 Mar in FBIS-SOV 20 Mar}

19 March Australian Foreign Minister Gareth Evans, addressing the CD plenary, introduces a new draft CWC {CD/1143} and explanatory memorandum. He says that his officials had visited "some 33 CD capitals" over recent weeks to consult on the draft, 80 percent of which comprised already agreed language from the Rolling Text, the remaining 20 percent advancing a "model for the kind of compromises which it will be necessary for all parties to make" on issues where agreement does not already exist. Senator Evans states that the draft is not a take-it-or-leave-it package (otherwise Australia would have sought co-sponsors); it is instead intended to accelerate the negotiations -- to "change the psychological climate" within which the talks are proceeding. He proposes that the Ad Hoc Committee Chairman, Ambassador von Wagner of Germany, hold consultations with delegations during the forthcoming inter-sessional period with a view to his producing a final consensus text in time for presentation in May. The projected ministerial-level meeting of the CD to endorse "the very end of the end-game" might then become feasible soon after the beginning of July. He speaks as follows of the grave consequences of not achieving a convention quickly: "There are three of them. A certainly heightened security risk -- there will be some individual countries at very grave risk indeed. Secondly, there will be a much less certain trading environment for chemicals -- a particularly serious problem for the countries of the developing worlds. And thirdly, there will be a massive loss of confidence in the capacity of cooperative multilateralism to produce solutions that are worth having to problems that must be solved." {CD/PV.617}

An unprecedentedly large number, 22, of other CD delegations have inscribed themselves on the speakers' list for today's plenary session. All address the CWC and commend the Australian initiative, albeit often with reservations about its particulars. Ambassador Ledogar of the United States echoes Senator Evans' call for a compromise Chairman's text, based on extensive inter-sessional consultations, by 11 May. So do the delegations of Ethiopia, Peru and, later, Romania, {CD/PV.618}, Canada {CD/PV.619} and Venezuela {CD/PV.619}.

Ambassador von Wagner, speaking as Ad Hoc Committee chairman, welcomes the "Australian model compromise convention" and the assurance that it is not intended as a substitute for the Rolling Text. He states that he will indeed be holding consultations and conducting negotiations on open issues during the inter-sessional period but says that he cannot promise a complete consensus text in time for the opening of the second session of the CD. {CD/PV.617}

19 March Ambassador Kamal of Pakistan, reviewing the state of progress towards the CWC, speaks in the CD plenary

of Article IX remaining "the acid test of the convention". He describes the four-nation challenge-inspection proposal as "an approach which is realistic and practicable, and which has the potential to command the consensus of the negotiating partners" [see also 1 Aug 91] and goes on to set out his country's position on the role of the Executive Council in challenge inspections, the dangers of abuse and the question of the observer. He reiterates his proposal that, as a universality-promoting measure, "those countries which presently apply export controls and restrictions on transfers of certain chemicals [should] publicly declare their intention to dismantle such measures for the States who become parties to the convention". {CD/PV.617}

19 March The CD once again admits the United Arab Emirates as a participating non-member {CD/PV.617}. There are now 42 such observer states for the 1992 sessions [see 24 Feb] in addition to the 39 member states.

19 March Iraq, in a letter to the Executive Chairman of UNSCOM, transmits what the latter describes as "important new information" about its ballistic-missile and chemical-weapons programs [see 11-12 Mar] {FT 21-22 Mar}. The letter reportedly gives an accounting of previously undeclared weapons {IHT 23 Mar}, including 45 chemical Scud-missile warheads and 24,245 other CW munitions which Iraq said it had destroyed during Summer 1991, among them 925 aircraft bombs and 19,000 122mm rockets {C&EN 20 Apr; *Jordan Times* 28 Apr & 6 May; Middle East News Network in CN 1 May; DTel 5 May}. Also contained in the letter is a promise that, by April, Iraq will produce a full disclosure of all its programs for development and procurement of prohibited weapons {Guar 23 Mar; UNDN April}.

24 March In Moscow *Izvestiya* reports that the Russian-American University (an independent nongovernmental body) has been developing a process for extracting from lewisite arsenic suitable for use in production of gallium arsenide semiconductors. The report says that the mine in Georgia which hitherto provided arsenic for this purpose has been destroyed by an earthquake, and that the ex-USSR stockpile of 6700 tonnes of lewisite stored in Udmurtia [see 3 Nov 90] is potentially a richer source. {*Izvestiya* 24 Mar in JPRS-TAC 9 Apr}

24 March UNSCOM 29 [see 21 Feb] leaves Iraq after destroying all the 463 damaged 122mm nerve-gas rockets at Khamisiyah by an explosive process somewhat akin to open-pit burning [see 3 Nov 91]. {AFP 24 Mar in FBIS-NES 25 Mar; IHT 25 Mar}

24 March The Netherlands, in a CD plenary statement, quotes the uncontested interpretative statement made by the United States in April 1976 that herbicide warfare falls within the scope of the prohibitions laid down by the Environmental Modification Convention. The Netherlands recommends that this interpretation be reiterated and clarified at the September 1992 EnMod Convention review conference. It argues that there is thus no need to incorporate the matter of hostile

uses of herbicides in the CWC as well. {CD/PV.618}

24 March North Korea addresses the CD plenary at some length on nuclear weapons and on the recent bilateral progress towards denuclearization of the Korean peninsula [see 28 Dec 91 and 19 Feb]. It makes mention of chemical weapons in the following terms: "The Korean people, who were the first victims of such weapons during the post-Second-World-War period, fervently seek the adoption of the chemical weapons convention. We think that there will be a need for further information on the negotiations in order to allow all countries to follow the drafting of the convention for the total abolition of chemical weapons; that in the negotiations it will be necessary to eliminate the factors which prevent the conclusion of the convention as rapidly as possible, and in particular to solve, on the basis of trust rather than verification, irrational problems which are not in keeping with the interests and demand of many developing countries." {CD/PV.618}

24 March In the US House of Representatives, a bill to establish a Nonproliferation and Disarmament Fund, HR 4549, is introduced in furtherance of a bipartisan initiative agreed two weeks previously by the Committee on Foreign Affairs {Prepared statement by Hon Dante B Fascell; C&EN 16 Mar}. The fund would be supported at up to \$75 million per annum; the President would have discretionary authority to use it to provide training, personnel and equipment in support of bilateral and multilateral efforts to halt the proliferation of all types of weaponry. Such support could include assistance to foreign countries or contributions to international organizations.

26 March The President of Switzerland, René Felber, addresses the CD. Among other matters he speaks of the candidacy of Geneva as host for the CWC international organization. He says that the Swiss Government would be prepared to make a special contribution of SFr 2.5 million to the Preparatory Commission towards financing infrastructure costs in Geneva during the transitional phase, plus an equivalent amount for the training of inspectors for the future organization. {CD/PV.619}

26 March The leader of the UK CD delegation, Ambassador Tessa Solesby, speaks in her valedictory statement to the CD of the use of experiments on animals as part of the implementation of the imminent CWC: "If there are cases -- and it seems they should be few, if any -- when the convention's Technical Secretariat or an individual State party considers it essential to undertake toxicity determinations for the purpose of the convention, I think there is widespread agreement that this should whenever possible be conducted through non-animal alternative methods such as cell culture or organ culture; and if this is not practical, with the least number of animals compatible with demonstrating the toxic features of a substance -- but I would hope the use of animals would rarely or never have to be resorted to. I suggest that this minimalistic approach be recommended to the Preparatory Commission and Technical Secretariat of the Con-

vention."

On the question of challenge inspection she says: "My authorities, after a dozen or so practical trials, concluded that there was no site so sensitive that we could not allow some form of access within it and that it was possible to reconcile the degree of intrusiveness necessary for effective verification with the protection of legitimate security interests. We have had to recognize that not all our negotiating partners could at this stage accept as open a regime as we favored. I cannot hide my personal disappointment that this is so. Nevertheless the prospects are good for consensus on verification procedures more extensive than in any other global agreement, procedures which will give the Convention a significant degree of deterrence against violation, even if not all I and many others had hoped for." {CD/PV.619}

26 March South Korea informs the CD that it will join the CWC as soon as it is adopted. {CD/PV.619}

A total of 43 states have now indicated to the CD, either in plenary statements or in the texts of plenary documents, their intention of becoming original signatories. Additional states have done so in other fora.

26 March The leader of the Indian CD delegation, Ambassador Prakash Shah, addressing the CD plenary, speaks of the development of the CWC schedules and says that "attempts should not be made to include chemicals which are used in legitimate peaceful activities, such as herbicides and riot control agents" {CD/PV.619}.

26 March The CD concludes the first of its three 1992 sessions. The first plenary meeting of the second session will be held on 14 May.

27 March The leader of Mozambique National Resistance (RENAMO), Afonso Dhlakama, calls at a press conference for an international commission to be established, before the next round of peace talks, to investigate the allegations that RENAMO has been using chemical weapons [see 15 Feb]. {Voz da RENAMO 28 Mar in BBC-SWB 30 Mar}

27 March In the US Congress, the House Committee on Foreign Affairs transmits to the Secretary of State a report strongly advocating US assistance to Russia in starting a chemical weapons destruction program. {Staff study mission report 24 Mar}

27 March US Director of Central Intelligence Robert Gates includes the following in open testimony to the House Armed Services Committee: "Baghdad surrendered [to the UN] thousands of chemical munitions, tons of chemical agents, and considerable production equipment, but we believe the regime still has more of everything -- more precursor chemicals, more bulk agent, more munitions, more production equipment. The regime never admitted having a biological weapons program and never surrendered any toxins or weapons. But we know the Iraqis had such a program, and we are convinced that they have been able to preserve some biological weapons and the means to make even

more."

Speaking later of Iran, he says: "Although extensive and improving, Iran's chemical weapon program remains relatively crude. Nevertheless, we expect Iran to develop chemical warheads for its Scud missiles within a few years. We also suspect that Iran is working toward a biological warfare capability." {Prepared testimony; IHT 28-29 Mar; WP 28 Mar; WT 21 Apr}

30 March In Russia, draft legislation is put before the Supreme Soviet which would improve the pension payments to families of 64 people who had died during the 1979 anthrax outbreak in Sverdlovsk [see 7 Mar] {*Rossiyskaya Gazeta* 1 Apr in FBIS-SOV 3 Apr}. Russian Environment Minister Yablokov reportedly tells a visiting delegation of the International Physicians for the Prevention of Nuclear War that the outbreak had been caused by an explosion during production of biological weapons {SZ 14 Apr}.

30 March In Geneva, the new Ad Hoc Group of Governmental Experts established by the Third BWC Review Conference [see 27 Sep 91] convenes to explore possible verification measures for the treaty {*New Scientist* 28 Mar}. The meeting is due to end on 10 April. The Ad Hoc Group is chaired by Ambassador Tibor Tóth of Hungary; 53 BWC states-parties are participating in it, with observers from WHO and UNIDO {BWC/CONF.III/VEREX/CRP.4/Rev.1}.

31 March On Johnston Atoll in the Pacific, the last of the VX-filled rockets held in storage is destroyed in the chemdemil facility [see 21 Jan], this bringing to an end, slightly behind schedule, Phase II of the JACADS Operational Verification Test. The OVT Phase III campaign -- testing the system with mustard-filled 1-ton containers -- is due to commence in July 1992. {Prepared testimony of Susan Livingstone, Assistant Secretary of the Army, before the Senate Defense Appropriations Subcommittee 12 May}

1 April President Bush, in responses to a questionnaire sent to US presidential candidates published by *Arms Control Today*, says: "A major priority of my administration has been the conclusion of a total ban on chemical weapons, an effort I have been pressing personally for years.... American leadership is making this ambitious goal achievable, and I am hopeful that we will see a convention concluded this year." {ACT April} [See also 13 May 91]

1 April "Iraq has insisted that its chemical weapons production did not start until 1986 [but see 19 Feb] and has claimed that all its chemical weapons were produced indigenously. However, the whole world knows, as attested by the United Nations itself, that Iraq used chemical weapons against Iran as early as 1983." So says the US Ambassador to the United Nations, Thomas Pickering, in testimony to the US Congress about Iraqi noncompliance with Security Council resolutions. Among the information which he says Iraq has not yet supplied to UNSCOM, as it should have, is "an adequate explanation of the genesis and evolution of the Iraqi chemical program complete with budget and organiza-

tional links, expenditure decisions, import sources and prior operational use". {Ambassador Thomas R Pickering before the Subcommittee on Human Rights and International Organizations, Subcommittee on Europe and the Middle East, and Subcommittee on International Operations, 1 Apr} [See also 19 Mar]

2 April Czechoslovakia, in a detailed submission to the BWC Ad Hoc Group of Governmental Experts [see 30 Mar], describes the BW defense programs of its armed forces since 1951. {*Narodna Obrada* 4 Apr in FBIS-EEU 9 Apr}

3 April The Executive Chairman of UNSCOM, Ambassador Rolf Ekéus, speaking to the press after reporting to the UN Security Council about Iraqi compliance with the ceasefire resolutions [see 19 Mar], says: "We have a situation of non-obstruction, but we can't say we have cooperation as long as we're convinced that things are concealed. We're still concerned that there are missiles out there, the information on chemical weapons is inconsistent, and we're concerned that with biological weapons we don't have enough information." {WP 4 Apr}

5 April In Iraq, a new international team of experts arrives to conduct the second UNSCOM chemical destruction inspection [see 24 Mar], focussing on the chemdemil facilities being built under UN supervision at Muthanna. The team of 14 people, UNSCOM 32, led by Ron Manley of the UK, is on an 8-day visit to provide advice on any modifications that may be needed as construction proceeds. The plants may be ready in June {*Boston Globe* & FAZ 6 Apr}. Sarin nerve-gas is to be destroyed by hydrolysis in one of the plants; in the other, mustard gas and agent CS are to be incinerated. Destruction of the Iraqi CW stockpile is expected to take 12-18 months {C&EN 20 Apr}.

5 April Libyan production of chemical weapons at Rabta Technology Center [see 23 Dec 91 and 15 Jan] is now proceeding with the assistance of a team of foreign technicians recruited by British businessmen, according to a London newspaper, the *Sunday Times*, quoting a draft contract between Tosalex Trading and the Technology Center. The newspaper reports that an underground chemical factory at the Center can produce sarin nerve-gas at 3 tons per day, and it quotes a Danish computer consultant who had worked at Rabta in 1991 as saying: "The first thing I saw was a lot of bombs. A man from Austria who was working there told me they were for nerve gas. They were supposed to put in 15 bottles, each one litre, per bomb." {ST 5 Apr}

7 April In the United States, one of the official Congressional observers of the CWC negotiations, Representative Martin Lancaster, publishes a commentary on the talks. He identifies three major obstacles to progress: the lack of a binding deadline; the absence of Western unity on the challenge-inspection issue [see 17 Mar and 26 Mar]; and a "Byzantine US interagency process that hamstring the US negotiating team". This last point he develops as follows: "The US team is headed by one of our most skillful negotiators,

Ambassador Stephen Ledogar.... Yet [he] has been given little negotiating authority...and must repeatedly maneuver through a time-consuming interagency process which requires many executive departments and agencies to approve even the simplest changes. Unless President Bush shakes the American delegation loose from this cumbersome inter-agency labyrinth, he will fail in his goal of achieving a total, universal ban on chemical weapons use and production." {*Christian Science Monitor* 7 Apr}

7 April The US General Accounting Office issues a report on the Defense Department requirements for individual chemical protective equipments during the Kuwait War and on how those requirements were satisfied. It recommends that the Defense Department "develop and implement a long-range action plan with target dates to ensure that required chemical defense equipment is available for all military personnel when needed". {GAO/NSIAD-92-116; C&EN 25 May}

8 April In Moscow, an interview with the Deputy Chief of the Chemical Troops of the CIS Joint Armed Forces, Major General Igor Yevstafyev, is published which discloses new details about the former Soviet CW stockpile. General Yevstafyev is reported as saying that one third of the 40,000 agent-tonne stockpile, all of which is in Russia, comprises lewisite, mainly produced before World War II, and about two thirds comprises the nerve gases sarin, soman and VX; there is also "a small quantity" of mustard gas and mustard-lewisite mixture. He had declined, however, to name the storage locations, saying: "It is not a question of not being frank but simply of ensuring that the probability [of storage tanks being ruptured by armed attack] does not drop to 10 to the power of minus two instead of 10 to the power of minus eight. The world is not without stupid people, and there are plenty of people seeking weapons". Two stockpile sites are mentioned, however: at Kambarka in Udmurtia [see 24 Mar], and at Gornyy in Saratov Oblast, the latter a pre-WWII facility. General Yevstafyev had also said that Soviet chemical weapons were not used in Afghanistan. {*Rossiyskaya Gazeta* 8 Apr in JPRS-TAC 8 May}

8 April In the US Senate, a bill (S 2543) to amend the FY 1992-3 Foreign Relations Authorization legislation is introduced which would seek to prevent the transfer of, *inter alia*, CBW technology or CBW-related dual-use goods or technology to Iran or Iraq by requiring the President to report any such transactions to the Congress within 30 days of learning about them, and imposing sanctions, both mandatory and discretionary, on any foreign firms or governments thereby implicated. {CR 8 Apr pp. S5052-76}

24 April In the United States the administration certifies to Congress that three of the four former Soviet republics with nuclear weapons -- Belarus, Russia and Ukraine -- are now eligible to begin receiving Nunn-Lugar funds to assist in the dismantling of their weapons of mass destruction {WP 27 Apr}. One of the preconditions laid down by Congress is that recipients should have pledged themselves to comply with the relevant arms-control agreements [see 5 Feb].

9 April In Argentina, President Menem signs a decree restricting the export of materials, equipment, technology and chemicals which can be used to produce nuclear, chemical or biological weapons. A government declaration later explains that the new regime "does not unjustly restrict legal trade, but rather includes international criteria and coincides with control measures adopted by other countries" [see also 5 Sep 91]. {*Noticias Argentinas* 27 Apr in BBC-SWB 29 Apr}

9 April President Bush, as required by US public law, transmits to the US Congress the administration's annual *Report on Soviet Noncompliance with Arms Control Agreements*. On BW the report repeats the substance of earlier ones [see 5 Feb]. It says: "The United States has determined that the former Soviet Union's extensive ongoing offensive biological warfare (BW) program violates the 1972 Biological and Toxin Weapons Convention. It is unclear what effect the recent formation of the Commonwealth of Independent States may have on the future of this program." But as usual the report presents no substantiation either of this conclusion or of its reaffirmation of the old mycotoxin-warfare accusations. {*US Department of State Dispatch* 4 May; ACT May}

9 April In the US House of Representatives, a bill (HR 4975) is introduced and referred to the Committee on Armed services which would provide for a moratorium on the construction of Army chemdemil incinerators in the United States until the Secretary of the Army certifies to the Congress that the incineration disposal process is the safest means available at reasonable cost. {CR 9 Apr p. H2672}

10 April In Geneva, the first session of the Ad Hoc Group of Governmental Experts exploring possible BWC verification measures [see 30 Mar] comes to an end. By the end of its first week it had elected two Vice-Chairmen -- Ambassador Gérard Errera of France and Dr Amir Saghafinia of Iran -- and undertaken "a structured general discussion of the relevant issues on, *inter alia*, background information, objectives for BWC verification, elements of a BW program, possible lessons from other disarmament and arms limitation regimes, and types of information relevant for verification"; and several delegations had presented or circulated papers. The second week had been devoted to the formulation of a matrix approach whereby the different types of potential verification measure, grouped into categories (off-site and on-site measures), subcategories and sub-subcategories, might each be considered against different types of BWC-violative activity, these being grouped, again with subcategories, into the three broad categories of development, production and stockpiling. For each of the three latter categories, the Chairman had asked an individual expert to act as moderator in the task of identifying and compiling potential verification measures -- Patrice Binder of France (development), Åke Bovallius of Sweden (production/acquisition), and Roque Monteleone Neto of Brazil (stockpiling/retention). In the final plenary session, the Group decides to continue its work on the basis of the matrix, and to meet again in Geneva for the period 23 November to 4 December. {BWC/CONF.III/VEREX/CRP.4/Rev.1}

10 April The US Defense Department submits to the Congress its final report on the Kuwait War, *Conduct of the Persian Gulf War* [see also 16 Jul 91]. The section on Iraqi military capabilities includes the following:

"By 1990, Iraq had the largest chemical agent production capability in the Third World, annually producing thousands of tons of blister agent mustard and nerve agents Sarin (GB) and GF. Sarin, a nonpersistent agent, is relatively easy to produce from readily available chemical precursors. GF, a semipersistent nerve agent similar to Soman (GD), was produced by the Iraqi research and development establishment when Western nations restricted the export of chemical precursors required for Soman. Iraqi delivery means, in addition to missile warheads, included aerial bombs, artillery shells, rockets, and aircraft-mounted spray tanks. During the war with Iran, Saddam exhibited the willingness to use CW against not only the Iranians, but also his own Kurdish population. In the Spring of 1988, Iraqi troops used CW against Iraqi Kurdish insurgents in the town of Halabjah [but see 8 Nov 90]. Thousands of civilian men, women, and children died.

"Four years earlier, Iraq had become the first nation in history to use nerve agents on the battlefield. While the agent was not used effectively in 1984, by the beginning of 1988, the Iraqis had developed an effective offensive doctrine for the use of nerve agents, which fully integrated CW into fire support plans. Both nerve and blister agents were used successfully in the final offensives that defeated the Iranians in 1988. These weapons were targeted specifically against command and control facilities, artillery positions and logistics areas....

"By the time of the invasion of Kuwait, Iraq had developed biological weapons. Its advanced and aggressive biological warfare program was the most extensive in the Arab world.... [The] program probably began in the late 1970s and concentrated on development of two agents -- botulinum toxin and anthrax bacteria... Large scale production of these agents began in 1989 at four facilities near Baghdad [but see 25 Oct 91]. Delivery means for biological agents ranged from simple aerial bombs and artillery rockets to surface-to-surface missiles."

The report offers the following information on the lethality of biological weapons: "Experimental data indicate botulinum toxin is about 3 million times more potent than the nerve agent Sarin. A Scud missile warhead filled with botulinum could contaminate an area of 3,700 square kilometers (based on ideal weather conditions and an effective dispersal mechanism), or 16 times greater than the same warhead filled with Sarin."

The report describes at some length the anti-CBW preparedness of US forces during the war. It says that the "total CW/BW defense force structure included 45 units with 6,028 soldiers" and that more than 1500 physicians, nurses and physician assistants had been given specialized casualty-care training by the Army Medical Research Institute of Chemical Defense. In summary, this part of the report stated: "US personnel, after intensive preparation in theater, were well trained to conduct sustained combat operations in a CW/BW threat environment, although some defensive equipment defi-

ciencies persisted. Overall, commanders and troops had confidence in the ability to survive CW/BW attacks and continue operations.... Although the Coalition's CW/BW defense was not truly tested in combat, many elements of an effective CW/BW defense, including a particularly energetic personal protection readiness program, clearly contributed to the overall deterrent and, importantly, to the ability of the Coalition to press ahead with a bold, offensive strategy."

11 April In Russia, President Yeltsin issues an ukase creating an export control system for dual-use technologies that could be used in the creation of, *inter alia*, chemical and other weapons of mass destruction [see also 3 Feb]. The system is to be overseen by a new Russian Federation Export Control Commission under the chairmanship of Yegor T Gaydar, First Deputy Chairman of the Russian Government, who is required to submit a draft statute and organizational plans within one month. {*Rossiyskaya Gazeta* 16 Apr in BBC-SWB 21 Apr}

11 April In Russia, President Yeltsin issues an ukase on implementing the 1972 Biological Weapons Convention in Russian domestic law, prohibiting Russian development, production or stockpiling of BW weapons (the United States had enacted corresponding implementing legislation almost two years previously [see 22 May 90]). Oversight responsibility is to rest with the Committee on CBW Convention Problems [see 19 Feb]. {Interfax 15 Apr in FBIS-SOV 16 Apr; WP 17 Apr; *Izvestiya* 27 Apr in BBC-SWB 30 Apr}

Committee personnel are later quoted by *Izvestiya* on ways in which the implementation might be verified: "[Such verification] can be not only Russian but also international, in the form of mixed groups, both on a bilateral basis -- Russian-US or Russian-British groups, for instance -- and on a multi-lateral basis. Naturally, this must be reciprocal verification.... Our scientists are willing to invite foreign experts to what were until recently highly secret research centers in Kirov, Yekaterinburg [formerly Sverdlovsk] and Sergiyev Posad [formerly Zagorsk] working for the military. They are proposing to carry out joint evaluation of the programs and to formulate a unified policy for switching them to a peaceful footing."

In its commentary on the ukase, *Izvestiya* also reports: "Admittedly, so Russian military experts assert, we have no problems with destroying bacteriological weapons since there are no stockpiles of these weapons in Russia, although we have carried out research and experimental-design work on them. We tested them in laboratories and even, in very diluted doses, at a special test site [Vozrozhdeniye Island in the Aral Sea [see 14 Mar], presumably, declared to the UN in 1987 [see 13 Oct 87]] which has now been shut down and handed over to the national economy after the appropriate control inspections. Scientists claim that it is quite safe. The increase in the wild animal population living on its territory is evidence of this." {*Izvestiya* 27 Apr in BBC-SWB 30 Apr}

At least in its headline, the *Izvestiya* commentary suggests that the Soviet Union had been violating the 1972 BWC and that the ukase was intended to call such noncompliance [see also 9 Apr] to a halt. Other Russian commentary went fur-

ther. According to *Komsomolskaya Pravda*, Soviet work on biological weapons began in earnest only after the BWC had been signed. {DTel 29 Apr}

12 April In Nagorno-Karabakh, the Azeri city of Shusha is bombarded by Armenian artillery firing 120mm chemical munitions, according to subsequent reports from the Azerbaijani Defense Ministry that are denied by the Nagorno-Karabakh Republic Defense Committee. Chemical analysis had found "substances of the cyanide group" in samples of shell-fillings and four people had been hospitalized, so the Azerbaijani Defense Ministry reports related. {ITAR-TASS 25 Apr in BBC-SWB 27 Apr; ITAR-TASS 26 Apr in BBC-SWB 28 Apr; WP 27 Apr; Armenpress 27 Apr in FBIS-SOV 28 Apr; Armenian Radio 28 Apr in FBIS-SOV 29 Apr} [See also 27 Feb and 18 Mar]

13 April In Iraq, the second UN chemical destruction inspection, UNSCOM 32 [see 5 Apr], comes to an end. {C&EN 20 Apr}

13 April From Washington, *Chemical & Engineering News* reports that the US Army is sponsoring a National Academy of Sciences study of chemdemil technologies alternative to incineration, including hydrolysis, aminolysis, thermohydrolysis, bioremediation, supercritical water oxidation, pyrolysis, fluidized-bed combustion, plasma arc and electrochemical techniques. The study-panel has already met once, and is due to produce a final report by the end of the year. {C&EN 13 Apr}

14 April In the fighting in Bosnia-Herzegovina, poison gas of an unknown type is used by Croatian forces south of Stolac, according to reports from the Yugoslav People's Army [see also 10 Nov 91]. {Tanjug in BBC-SWB 16 Apr} Later, a spokesman for the Serbian Territorial Defence speaks of the use of poisoned bullets in Foca by fighters of the Party of Democratic Action. {Radio Belgrade 19 Apr in BBC-SWB 21 Apr}

15 April In Iraq, a team of eight UN inspectors from four countries, lead by James Knapp of Canada, arrives to conduct the eighth UNSCOM chemical inspection. Its mission is to verify, to the extent possible, the Iraqi declaration [see 19 Mar] of chemical munitions that were unilaterally destroyed in the Summer of 1991 at 14 different disposal sites. {*Jordan Times* 28 Apr & 6 May}

ca 15-17 April In Japan, the NHK public television network broadcasts on successive evenings a documentary based on Russian and US archive material about Japanese BW experimentation during World War II involving human subjects, and about how those responsible had escaped prosecution as war criminals. {*San Diego Union-Tribune* 19 Apr}

17 April In Moscow, *Izvestiya* publishes a further article [see 10 Dec 91] by its Yekaterinburg correspondent, Aleksandr Pashkov, about the 1979 anthrax epidemic in Sverdlovsk [see 30 Mar], as the city was then called. The article reports

an interview with the Chief of the CIS Joint Armed Forces Directorate for Protection against Biological Weapons, Medical Service General Valentin Ivanovich Yevstigneyev.

General Yevstigneyev speaks of the situation at Military Camp 19 when the epidemic started, at which time the then-commanding officer was dying of cancer: "Senior officials from Moscow simply intimidated his deputy. They isolated the camp and put it in quarantine. They immediately decided that all the infection came from there, you see. The security organs and the sanitary services created such an atmosphere of secrecy and intimidation around the population that there was no longer any doubt about it -- he was to blame for the tragedy.... We were simply denied access to everything! We only found out later, for example, that the carcasses of slain animals were taken to furnaces at a ceramics plant in order to incinerate them.... At the moment the only thing we can be clear about is that, prompted by foreign and domestic information services and supported by ill-qualified directors, work on developing a more effective anthrax vaccine was suspended for several years in 1980, and the Sverdlovsk plant that produced vaccines and diagnostic substances was closed down. We became victims of the former state's supersecrecy and the absence of laws regulating this sort of activity. But the facts may emerge." {*Izvestiya* 17 Apr in FBIS-SOV 28 Apr}

20 April In the Russian Federation, authorities in Udmurtiya announce a competition for the best design of an enterprise for the processing of lewisite into arsenic [see 24 Mar]. The idea, which has the backing of both the government and the Supreme Soviet of Udmurtiya, is that the winner will become one of the founders of a joint stock company which will engage in the commercial sale of lewisite. {*Kommersant* 20-27 Apr in JPRS-TAC 18 May}

21 April In Iraq during the past several days, a UN inspection team has visited a suspected biological weapons facility on the Tigris river south of Baghdad, according to today's *Washington Times* quoting UNSCOM spokesman Tim Trevan. {WT 21 Apr}

24-26 April In Dallas, under the auspices of Southern Methodist University, the Defense Nuclear Agency and Los Alamos National Laboratory, there is a conference on arms-control verification, with presentations on CWC-related issues. {DN 11 May}

27 April In Moscow a team from the Committee on CBW Convention Problems [see 19 Feb] leaves for talks in the United States on joint US-Russian programs for destroying the CW agents of the former USSR [see also 24 Mar] {*Izvestiya* 28 Apr in BBC-SWB 30 Apr}. The chairman of the committee, Lt-Gen Anatoliy Kuntsevich, reportedly visits, in early May, the Departments of State and Defense and the US Army's chemdemil training site at Aberdeen Proving Ground {*The ASA Newsletter* 5 Jun}.

General Kuntsevich, in an interview with *Izvestiya*, speaks of the strategy his committee is now developing for the Russian chemdemil program. Citing the Chapayevsk experience

[see 6 Sep 89], he identifies opposition from communities in the vicinity of chemdemil plants as the primary obstacle to be overcome. He believes that such communities should have prior guarantees from the President or the Russian Government that they will receive higher wages and other material and social benefits, thus ensuring that their support for chemdemil operations is, as *Izvestiya* puts it, "advantageous and comprehensively safeguarded". He says that his plans envisage spending 30 percent of the entire sum allocated to chemical disarmament, as well as virtually all of the foreign investment in it, on such guarantees.

General Kuntsevich reportedly says, further, that his plans are to build several chemdemil facilities, but without yet saying where: "First we will obtain the documentation guaranteeing benefits, hold talks with people, obtain their agreement, and only then can we name specific regions or oblasts". The program, its timetable and its choice of chemdemil technologies (including options, not for incinerating CW agents, but for converting them into useful products [see 24 Mar]) will directly depend on the results of such talks. He estimates that the overall program will cost Russia a total of R100,000 million at current prices. {*Izvestiya* 28 Apr in BBC-SWB 30 Apr}

The chief of the CIS Joint Armed Forces Department of Chemical Arms, Colonel Viktor Kholstov, had earlier stated that, according to a draft decree just worked out by the relevant ministries and departments of the Russian government, the selection of chemdemil locations was to be entrusted to a special commission that would be given three months to complete the task. Colonel Kholstov had, however, doubted the feasibility of Russia completing its chemdemil program within the 10-year period specified in the current draft CWC. He had said that, as there had been no serious incident with chemical weapons over the past 40 years of their storage in stationary containers, they could safely be stored for another 20 or 30 years [see also 8 Apr]. {Radio Moscow 17 Apr in BBC-SWB 20 Apr}

27 April In Germany the trial begins in a criminal division of the Darmstadt regional court of ten people accused of supplying Iraq during 1982-88 with equipment for producing chemical weapons [see 11 Mar 91] in violation of foreign trade law. The defendants are from the firms Karl Kolb, Pilot Plant and WET, as well as from subcontractors. Some 80 witnesses and experts are to be called. Prosecution requests for UNSCOM experts to testify have so far been blocked, but a recently completed 500-page UNSCOM report has been made available to the state prosecutor. The trial is scheduled for 70-100 days. {FR 6 Apr; DerS 13 Apr in FBIS-WEU 14 Apr; SZ 25-26 Apr; Tag 27 & 28 Apr; FR 28 Apr; SZ 29 Apr in the German Tribune 15 May}

27 April In Germany, the Society for Threatened People announces that it is bringing a civil action against the firms Karl Kolb and Pilot Plant, seeking compensation from them for the Kurdish and Assyrian victims of Iraqi CW attacks. {Gesellschaft für bedrohte Völker press release 27 Apr}

28-29 April At the Main Command of the CIS Joint Armed

Forces, senior representatives of the Defense Ministries of the CIS meet in preparation for the CIS Tashkent summit on 15 May. Among the documents agreed for consideration at the summit is an agreement on chemical weapons [see 3 Feb]. {ITAR-TASS 28-29 Apr in BBC-SWB 30 Apr}

29 April Leaving Iraq is the UNSCOM inspection team led by James Knapp of Canada [see 15 Apr]. The team is later reported to have confirmed "within acceptable margins of error" that Iraq had indeed destroyed the chemical weapons it said it had destroyed during the previous Summer. Most, if not all, of the weapons in question had apparently been unfilled. {*Jordan Times* 28 Apr & 6 May; Middle East News Network in CN 1 May}

30 April The Chairman of the CD Ad Hoc Committee on Chemical Weapons distributes a working paper reflecting the current state of his consultations on the challenge-inspection provisions of the *Protocol on Inspection Procedures* [see also 12 Mar], still including much bracketted language. {CD/CW/WP.395}

30 April Austria submits to the CD Ad Hoc Committee a technical working paper {CD/CW/WP.396} on the selection of gas-chromatographic phase systems for verification analysis.

1 May The US Senate Foreign Relations Committee conducts a hearing on the CWC negotiations, taking evidence from the leader of the US CD delegation, Ambassador Stephen Ledogar, and from a panel of nongovernmental witnesses {C&EN 11 May}. Ambassador Ledogar speaks of "sharp differences" on the key issues, some of which are "conceptual differences about the very nature of the international regime we are crafting". He continues: "Unfortunately, not all delegations are committed to the same objectives as the US, our allies and such countries as India and Brazil. Some appear simply not to care, while others are unwilling to sign a treaty that does not meet their rather extreme views." He outlines the key issues on which he says compromises are now urgently needed: challenge inspection; inspection of the chemical industry; "riot control agents"; export controls and trade restrictions ("a kind of system of export control policy coordination at present maintained by the 22 members of the Australia Group must continue"); and the Russian CW stocks. {Prepared testimony}

On "riot control agents" he testifies that, in contrast to the "offensive military purposes" which have been excluded from US weapons-employment policy since 1975, "there are quite legitimate uses for non-lethal chemicals for law enforcement[,] in defensive military modes and to save lives in a variety of circumstances. We are not prepared to rule out these uses under a CW convention." During the subsequent colloquy with the Committee Chairman he says: "My current instructions propose that riot control agents simply be defined out of the convention, not included. That position has not gained a lot of support. The majority position would take the opposite side and would have riot control agents defined in and therefore covered by all of the provi-

sions.... Now, at present the United States is reviewing my instructions on riot control agents, I am told, to see whether some compromise between the two extremes that are on the table now in Geneva might be reached."

On the issue of chemical-industry controls, the Committee receives testimony from the Chemical Manufacturers Association that the chemical industry wants a swift "ironclad ban on chemical weapons -- now and for all time" and is told by the CMA representative, Will Carpenter of Monsanto [see 8 Feb] that the outstanding problems have to do mainly with the scope of the verification regime that is to be applied to the "Schedule 3 and other relevant facilities". Dr Carpenter says that the reasons why the US Government has been pressing for a narrowly drawn 'Schedule 3 plus' regime have to do with "facilities related to national security", adding: "Don't believe for a minute that industrial interests are responsible"; the CMA and overseas counterparts favor a broad regime in which *all* chemical plants would be liable to inspection. {Prepared testimony}

4-7 May In Rome there is a meeting of the [CD] Western Group at high official level to consider the outstanding CWC negotiating issues and to promote Western unity on their solution. The topics addressed include challenge inspection, disabling chemicals and the collective role of UN Security Council permanent members in developing CWC universality.

5 May Austria, in a submission to the CD Ad Hoc Committee on Chemical Weapons, describes its experiences with old chemical weapons remaining on its territory since World War II -- in particular, the remains of a large quantity of CW munitions that been stored near Vienna, at the Wehrmacht Gross-Mittel munitions plant, and partly destroyed in an air raid. These munitions had been collected, sorted and provisionally buried during 1949-50; some 28,000 of them -- 75mm and 105mm artillery projectiles, the latter with a nitrogen-mustard fill, and 150mm artillery rockets, all of them unusable -- had been transferred to long-term storage during 1974-76. {CD/CW/WP.397} [See also 1 Apr 91]

8 May In Nagorno-Karabakh, Armenian artillery bombardment of the Azeri city of Shusha once again [see 12 Apr] includes shells filled with hydrogen cyanide and cyanogen chloride, according to Azeri reports. {ITAR-TASS 10 May in FBIS-SOV 11 May; 'Vesti' newscast 14 May in FBIS-SOV 15 May}

8 May War between India and Pakistan potentially involving the use of nuclear or chemical weapons could erupt as early as July reports the Washington weekly *Inside the Air Force*, citing a "secret intelligence memorandum". {ITAF 8 May}

8 May In the US House of Representatives, the Banking Committee holds a hearing on HR 4803, a bill that would halt all US funding of the International Monetary Fund, the World Bank and other multilateral development agencies unless all countries receiving aid from such institutions agreed to be bound by international nonproliferation agreements. The bill would also prevent the US Export-Import Bank from assisting countries which are producing weapons of mass destruction

or which are seeking to do so. Administration witnesses before the committee strongly oppose the bill. {Guar 11 May}

8-9 May In The Hague, the Dutch Foreign Ministry convenes its international seminar on the first five years of the Organization for the Prohibition of Chemical Weapons [see 12 Feb]. {IHT 11 May}

11 May In Geneva the CD reconvenes for the second of the three sessions it has scheduled for the year. This session is due to end on 26 June.

12 May The US Senate Defense Appropriations Subcommittee receives Defense Department testimony on the FY 1993 CBW program budget request. A total of \$1300 million is being sought for the year, 43 percent for chemical and biological defense, 49 percent for chemdemil and 8 percent for CWC-verification-related activities.

While explaining the request, Deputy Assistant to the Secretary of Defense (Chemical Matters), Dr Billy Richardson, says that BW defense and the impact of BW upon US forces -- potentially a "far greater" impact than that of CW agents are now receiving more emphasis than in the past, and that the Chairman of the Joint Chiefs of Staff and the Deputy Secretary of Defense have designated BW defense as a "priority requirement".

12 May The new US Army Chemical Materiel Destruction Agency [see 18 Feb] is expected to be formally established by 1 October 1992, so the Army testifies to the Congress, observing also that the new agency "will provide an organization poised to meet requirements of a multilateral chemical treaty". For start-up funding, \$3.6 million is allocated to USACMDA in the FY 1993 budget request.

The Army testimony also reports an 18-month slippage in the schedule for completing the disposal of the US CW stockpile, and a 22 percent growth in the estimated total costs: the completion date is now set at December 2000, and the revised life-cycle cost estimate is \$7900 million [see also 10 Feb]. {Prepared testimony of Susan Livingstone, Assistant Secretary of the Army, before the Senate Defense Appropriations Subcommittee}

13 May In Germany the Mannheim state prosecutor brings charges against two former executives alleging their illegal involvement in the Libyan chemical-weapons facility at Rabta [see 5 Apr] during 1984-88. One is a former manager of Salzgitter-Industriebau GmbH [see 23 Dec 91]; the other, a former manager of Imhausen-Chemie GmbH [see 1 Aug 91]. {FR & IHT 14 May}

15 May Moscow Radio reports an interview with Dr Anatoliy Kunstsevich, chairman of the Committee on CBW Convention Problems [see 19 Feb], about his committee's work on implementing the BWC in Russia further to President Yeltsin's recent ukase on the subject [see 11 Apr]: "Dr Kuntsevich said that after the ratification of the international convention there were, legally speaking, violations of it in this country.

Since there were no bans, research in this field continued. It continued even after 1975 when the USSR ratified the international convention. It was only in the mid-1980s that steps began to be taken to curtail these offensive programs... Dr Kuntsevich confirmed that there are now no stockpiles of biological warfare agents in Russia. Indeed he explained that the agents that had been developed had a short storage life, which made stockpiling impossible. Actually there was laboratory research and the testing of the product of this research at the country's only proving ground for this purpose [see 22 Feb]. All work at that proving ground has now been halted and the special purpose structures erected there are to be dismantled within a couple of years... Foreign experts have been invited to the recently top secret military facility." {Radio Moscow 15 May in FBIS-SOV 19 May}

18 May In the CD Ad Hoc Committee on Chemical Weapons, the Chairman distributes a *Working Paper for the Final Phase of the Negotiations on the Chemical Weapons Convention*. {CD/CW/WP.400}

The paper comprises an almost complete draft CWC, a 'Text on the establishment of a Preparatory Commission' and 'Material to be submitted to the Preparatory Commission'. The draft treaty contains neither bracketted alternative language on the still-contentious issues, nor dissenting or qualifying footnotes. Instead it includes sidelined passages, these being the "visions" for compromise solutions that had been called for by the Chairman during the first session from the various Friends of the Chair and other Bureau members [see 12 Mar]. The unmarked remainder of the draft "represents non-controversial material of the Rolling Text which has been restructured and edited by the Chairman in order to bring it closer to the form of a consistent legal instrument". The paper proposes that private and open-ended consultations now focus on the sidelined parts of the draft.

19 May In the US House of Representatives, the Armed Services Committee reports out on the 1993 Defense Authorization bill. On the Chemical Stockpile Disposal Program, it proposes that, as regards the statutory completion date [see May 12], the existing law -- section 1412(b) of PL 99-145 -- be amended to provide more flexibility: "The Secretary of Defense shall carry out the destruction of the stockpile in accordance with a schedule adopted by the Secretary consistent with the diplomatic and treaty obligations of the United States". On the CBW defense programs, the report is critical of the Army's management of its tri-service responsibilities and recommends that the Defense Department's focal point office for CBW defense assumes a more active oversight role. {House Report 102-527; CQ 30 May}

20 May In Nakhichevan Autonomous Republic (the disjunct part of Azerbaijan within Armenia that borders Iran and Turkey), Health Minister Farhad Dzhafarkuliyev states that Armenian forces, in the course of their bombardment of the border town of Sadarak two days previously, had been firing shells filled with cyanide [see also 8 May] and mustard gas, evidence of this having been found in samples of blood tak-

en from casualties currently under treatment in a local hospital. {ITAR-TASS 20 May in FBIS-SOV 20 May}

27 May In Moscow, *Komsomolskaya Pravda* publishes an interview with President Yeltsin, conducted four days previously, which includes the following exchange (the ellipses are part of original text):

"[*Komsomolskaya Pravda*] You knew about the development of bacteriological weapons in Sverdlovsk. But it was only recently that you first talked about it publicly. Why did you keep quiet all that time?

"[Yeltsin] First, nobody asked me about it. And, second, when I learned that these developments were under way I visited Andropov...When there was an anthrax outbreak, the official conclusion stated that it was carried by some dog. Although the KGB had already admitted that our military developments were the cause [but see 17 Apr].

"Andropov phoned Ustinov and ordered these production facilities to be completely scrapped. I believed that this had been done. It turned out that the laboratories were simply moved to another oblast and development of the weapons continued. And I told Bush [see 1 Feb], Major and Mitterrand this -- that the program was under way...I signed a decree setting up a special committee and banning the program [see 11 Apr]. It was only after this that experts flew out specially and stopped the work." {*Komsomolskaya Pravda* 27 May in FBIS-SOV 28 May}

28-29 May In Washington senior officials from the five permanent members of the UN Security Council -- China, France, Russia, the UK and the USA -- meet for the third time since the Kuwait War to discuss controls on the arms trade, particularly with the Middle East [see 8-9 Jul 91]; the previous such P-5 meeting had been in London in October. They agree to adopt a document, *Interim Guidelines Related to Weapons of Mass Destruction*, which declares that the five countries will "observe and consult" upon the guidelines it sets out.

Guideline no 4 is: "Not assist, directly or indirectly, in the development, acquisition, manufacture, testing, stockpiling, or deployment of chemical weapons by any recipient whatsoever". Guideline no 5 is: "Not export equipment, material, services, or technology which could be used in the manufacture of chemical weapons except when satisfied, for example, by recipient country guarantees or confirmation by the recipient, that such exports would not contribute to the development or acquisition of chemical weapons". Guideline no 7 is an identical one for biological weapons. Guideline no 6 is on the BWC -- compliance with its provisions, and support for efforts to enhance its effectiveness. {*Interim Guidelines Related to Weapons of Mass Destruction*, 29 May}

Recent Publications

- Badelt, Joachim, Eric Chauvistré and Peter Lock, "Disposing of chemical weapons: a common heritage calls for a cooperative approach", *Bulletin of Peace Proposals*, vol. 23 no. 1 (March 1992), pp. 43-50.
- Bothe, Michael, Raija Hanski, Thomas Kurzidem and Natalino Ronzitti, "National implementation of the Australia Group export constraints and the national preparation for the implementation of the CWC: the cases of Germany, Italy and Finland", in Brauch *et al* (see below), pp. 221-233.
- Bowman, Steven R., "Chemical and Biological Weapons Proliferation", in *The Proliferation of Nuclear, Chemical, and Biological Weapons and Missiles*, Congressional Research Service, Library of Congress, 8 April 1992, pp. 11-16.
- Brauch, Hans Günter, Henry J. Van Der Graaf, John Grin and Wim A. Smit (eds.), *Controlling the Development and Spread of Military Technology: Lessons from the Past and Challenges for the 1990s*, Amsterdam: VU University Press, 1992, 406 pp.
- Brickhill, Jeremy, "Doctors of death. Exposed: the masterminds of Rhodesia's secret poison war campaign", *Horizon* (Harare): March 1992, pp. 14-15 & 17.
- Canada, External Affairs and International Trade, *The Chemical Weapons Convention and the Control of Scheduled Chemicals in Canada*, February 1992, 36 pp.
- Cole, Leonard A., "Risk and biological defense research", *The PSR Quarterly* vol. 2 no. 1 (March 1992), pp. 40-50.
- Cordesman, Anthony H., "Iran and weapons of mass destruction", *Congressional Record* (daily edition), 8 April 1992, pp. S5058-62.
- Cordesman, Anthony H., "Iraq and weapons of mass destruction", *Congressional Record* (daily edition), 8 April 1992, pp. S5062-76.
- Davison, William R., and Donald R Reinhard, "Cryofracture: an attractive technology for chemical weapon destruction", *ASA Newsletter* no. 30 (5 June 1992), pp. 1 & 22-23.
- Eisenmeyer, W., G. Drasch, M. von Clarmann, E. Kretschmer and G. Roeder, "Clinical and morphological findings on mustard gas poisoning", *Journal of Forensic Science*, vol. 36 no. 6 (November 1991) pp. 1688-98.
- Geissler, Erhard, "Molecular biotechnology and the Third Review of the Biological Weapons Convention", in Brauch *et al* (see above), pp. 95-108.
- Harris, Elisa D., "Towards a comprehensive strategy for halting chemical and biological weapons proliferation", *Arms Control* (London: Frank Cass) vol. 12 no. 2 (September 1991) pp. 129-160.
- Heher, Jörn, "Clara Immerwahr und Fritz Haber: ein verdrängtes Kapitel männlicher Wissenschaftsgeschichte", *Informationsdienst Wissenschaft & Frieden* vol. 10 no. 1 (February 1992) pp. 14-17.
- Israel, Israeli Defense Forces, several specialist articles on medical lessons drawn from Israeli civil-defense experience during the Kuwait war, *Israeli Journal of Medical Science*, vol. 27 no. 11-12 (November/December 1991).
- Jahnke, J., "Mit den Mitteln des Rechtsstaates gegen die Verbreitung von Massenvernichtungs-Technologie", *Zeitschrift für Rechtspolitik* vol. 25 no. 3 (March 1992) pp. 83-84.
- Kisselev, Sergei N., "The former USSR and non-proliferation of chemical weapons", in Brauch *et al* (see above), pp. 213-220.
- Krause, Joachim, "Die Kontrolle der irakischen Rüstung durch Vereinte Nationen und IAEA", Stiftung Wissenschaft und Politik report no. SWP-IP 2735, Ebenhausen, February 1992, 35 pp.
- Leitenberg, Milton, "A return to Sverdlovsk: allegations of Soviet activities related to biological weapons", *Arms Control* (London: Frank Cass) vol. 12 no. 2 (September 1991) pp. 161-190.
- Leitenberg, Milton, "Anthrax in Sverdlovsk: new pieces to the puzzle", *Arms Control Today*, vol. 22 no. 3 (April 1992) pp. 10-13.
- Lohs, Karlheinz, "Möglichkeiten und Grenzen der Entsorgung von militärischen Altlasten", *EntsorgungsPraxis*, 1992 no. 3, pp. 101-5.
- Olson, Kyle B., "Industry and the implementation of chemical and biological weapons control", in Brauch *et al* (see above), pp. 205-212.
- O'Malley, T. J., "The Gulf conflict -- a chemical warfare post-script", *Armada International* vol. 15 no. 4 (August-September 1991) pp. 16-27.
- Roberts, Brad, "Chemical disarmament and international security", *Adelphi Papers* [London: Brassey's, for International Institute for Strategic Studies] no. 267, Spring 1992, 84 pp.
- Robinson, J. P. Perry, "The Australia Group: a description and assessment", in Brauch *et al* (see above), pp. 157-176.
- Singh, Ravinderpal, "Post-Cold War dual-use technology transfer order: policy implications for India", *Strategic Analysis* (New Delhi) vol. 14 no. 10 (January 1992) pp. 1181-95.
- Trapp, Ralf, "International constraints for chemical research and development: the prospected Chemical Weapons Convention", in Brauch *et al* (see above), pp. 109-119.
- Zdobinsky, Michal, "Czechoslovak chemical defense units in the Gulf", *Jane's Intelligence Review*, April 1992.

Chemical Weapons Convention Bulletin

Quarterly Journal of the Harvard-Sussex CBW Program

307 Massachusetts Avenue, NE

Washington DC 20002 USA

Forthcoming Events

* In London, the Chemical Industries Association (CIA), in cooperation with CEFIC, CMA and others, will hold an International Trade Controls Conference on 25 June. Contact Kathleen Drake of CIA for more information at 44-71-834-3399.

* In Australia, the Peace Research Centre of the Australian National University, in conjunction with others, will hold a conference on Arms Control in the Post-Cold War World in Can-

berra during 25-26 June, and in Perth during 29-30 June. Papers on CBW will be presented at both.

* In Geneva, the CD will resume the third part of its 1992 session on 20 July. This session will run through 3 September.

* The 42nd annual Pugwash Conference on Science and World Affairs will be held in Berlin during 11-17 September. The title of the confer-

ence is "Shaping Our Common Future: Dangers and Opportunities", and it will include a session on CW. Attendance at the conference is by invitation.

* In England, the Third Wilton Park Arms Control Seminar on Chemical and Biological Weapons will take place at Wiston House in Sussex during 25-27 September. Attendance at the conference is by invitation.