



Biological Weapons: Where have we come from over the past 100 years

BY MILTON LEITENBERG

Biological weapons (BW), in the form of an alleged threat of “bioterrorism,” have been much discussed in the past 20 years, most particularly since the distribution of spores of *B. anthracis* through the U.S. postal system in September and October 2001. This specter has been touted by the vociferous efforts of a small number of individuals. They have been aided by the “stakeholders” whose numbers grew dramatically following quite substantial Federal expenditure after 2002. The subject of “bioterrorism” became the tail that wags the BW dog. But what in fact is the status of BW and what has it been for the past 40-50 years, in particular since the Biological and Toxins Weapons Convention (BTWC, or BWC) was signed in 1972?

During the First World War, the pathogen that produces glanders was used by Germany in an attempt to infect allied horses, on which the war’s logistics depended. The effort failed and had no military consequences. France initiated a

BW program in the early 1920s, and the Soviet Union in 1928. Japan followed around 1933. Canada and the United Kingdom were next in 1937 and 1939, and the United States in 1943. Japan was the only country to use BW during the Second World War in China. But the Japanese program was again a failure and had no military consequences.²

The United Kingdom, United States, Soviet Union, France, and Canada all continued their programs after the war, and Israel initiated a BW program in the early 1950s. By 1956 Britain essentially terminated its offensive BW program without any public statement to that effect.³ In a move that produced far greater political consequences and that was publicly disclosed, the U.S. government unilaterally decided to end its offensive BW program in November 1969. This occurred as a consequence of pressures produced by the United States’ use of incapacitating chemical agents in combat in Vietnam, and chemical

herbicides to destroy food crops and forest cover. In the course of the deliberations to reach this decision, a significant consideration was an argument based on a concept dating from 1961 concerning nuclear proliferation referred to as “the N-th Nation Problem.” The argument was that extremely few countries possessed biological weapons, and any further proliferation of them would be a military disadvantage to the United States. In addition, they were redundant and unnecessary in view of the U.S. possession of nuclear weapons. Other domestic political and military considerations, such as the administration’s continued interest in an untrammeled pursuit of the war in Vietnam, and the insistence of the Joint Chiefs of Staff to retain chemical weapons, also played important roles. In the course of the next two years the United States also destroyed the relatively small stocks of bulk agents and biological weapons that it possessed.⁴

Up to this point, efforts to achieve an agreement on chemical and biological disarmament at multilateral negotiations in Geneva had always considered the two weapon types together, a precedent going back to the Geneva Protocol of 1925, which forbade their use in warfare. Following the U.S. decision to end its offensive BW program, the British government proposed a treaty concerning BW alone. Although the suggestion to separate BW from CW was initially opposed by the Soviet Union and its allies, agreement on a stand-alone ban on BW was reached by the end of 1971.

The BWC was signed on April 10, 1972, banning the development, production, acquisition, retention, stockpiling and transfer of infectious disease agents and natural poisons (toxins) for hostile purposes, and the weapons or other delivery systems for them. It applies to pathogens that could be used against people, animals, or plants. The United States, United Kingdom, and Soviet Union served as co-depositories for treaty signatures. The BWC entered into force on March 26, 1975. The Russian Foreign Ministry stated that Russian compliance with the BWC was "guaranteed by the appropriate institutions of the USSR" and that the Soviet Union did not possess any BW agents, toxins or weapons.⁵ The Treaty did not, however, include any direct verification mechanisms, only "consultations."

Some twenty years later it would be learned that the Soviet Politburo decided exactly in 1972 to institute a massive expansion of its BW program that eventually involved dozens of research institutes, tens of thousands of scientific and technical workers in four

ministries and several additional agencies: the Ministries of Defense, Health, Agriculture, Chemical Industry, and Medical and Microbiological Industries, as well as the Academy of Sciences. Massive "mobilization capacity" production facilities were built and proof-tested to be ready for production of BW agents when ordered in a mobilization period prior to an anticipated war with the West. At the end of October 1989, Vladimir Pasechnik, a senior research scientist

and administrator in the Soviet offensive BW program, defected to the UK and was debriefed. For the next two years, Soviet President Mikhail Gorbachev either was unwilling or unable to put a final end to the Soviet program despite repeated efforts by the U.S. president, UK prime minister, their most senior

foreign policy officials and their ambassadors in Moscow.⁶ This was despite Gorbachev's enormous success in convincing or forcing the Soviet military leadership to accept a half dozen major arms control treaties that required them to destroy great quantities of Soviet conventional and strategic weapons. The entire system was in gross violation of the BWC, and it was not until early 1992 that Russian President Boris Yeltsin even admitted that it had existed.

Beginning in 1988, U.S. officials stated in congressional testimony that at the time of the signing of the BWC in 1972 there had been four nations in possession of offensive BW programs, and that this number had increased to ten by 1988. They identified nine of these countries by name: Iraq, Egypt, Libya, Syria, Iran, the Soviet Union, China, North Korea, and Taiwan. In 1997 the estimate of such countries

was increased to twelve and in 2001 to 13, although no further public identification of which countries were being referred to was made. South Africa was not mentioned (nor Israel), although the U.S. and UK governments were instrumental in 1994-95 in pressuring South Africa's first post-apartheid government to abandon the offensive BW program that had been initiated in 1980.⁷ Iraq's BW program was terminated as a consequence of its military defeat in 1991.

Officials, analysts and academics in the United States universally stated that BW proliferation was and had been a constantly increasing trend since the mid-1970s. This would turn out to be incorrect. BW proliferation had been very low, and the trend line through all of the period from the mid-1970s to 2000 was probably flat and then decreasing. Although there was no way to have understood this earlier on the basis of publicly available information, it was in striking contrast to decades of threat estimates. By 2006-07, official estimates by U.S. agencies of countries having or suspected of having offensive BW programs was reduced to six. In the most recent U.S. Department of State report on national compliance with arms control treaties in August 2011, the descriptive phrasing became completely nebulous. There was not a single explicit attribution of an offensive BW program to any state.¹⁰ In addition, there has never been any evidence to this date of assistance from state-run BW programs being extended to non-state actors.

While the global status of offensive state BW programs seemed therefore to be notably constrained, there were beginning to be stirrings at the level of *non-state* actors. In 1984, the Rajneesh sect located in The Dalles, Oregon spread salmonella over food in restaurant salad bars. The pathogen had been legitimately obtained from a culture collection. It was a test for an effort to use the agent as an incapacitant to prevent people in the community from voting in a local election. It succeeded in that over 750 people were sickened, but there were no fatalities and salmonella was not used again at the time of the election. Between 1990 and 1994 in Japan, Aum Shinrikyo, another religious cult group built and commanded by a single leadership figure, attempted to produce two BW agents, botulinum toxin and *B. anthracis* spores. The Aum's ambitions

were more grandiose and their efforts, facilities and expenditures much greater. It had been essentially undisturbed and had sufficient time in which to work. Significantly, the group was never able to obtain a pathogenic strain of either agent that they were interested in. Their BW effort failed.⁸ The same group was able to produce an organophosphate chemical agent and release it in a relatively inefficient manner in two incidents in 1994 and 1995 with lethal consequences.

In the third significant effort by a non-state actor, the al-Qaeda organization based in Afghanistan, which successfully carried out the attacks on September 11, 2001 in the United States using civilian airliners as highly destructive missiles, also attempted to obtain biological weapons between 1997 and the end of 2001. Their effort, barely initiated with incompetent personnel and far more amateurish than that of the Japanese group, was also a failure. Like Aum, al Qaeda failed to obtain a pathogenic strain of the organism that it was interested in, which was again *B. anthracis*.¹¹ A very significant finding as to the impetus to the al-Qaeda BW effort was explained in a memorandum found on the computer of Dr.

Ayman al-Zawari, the second in command of al-Qaeda. It stated "...we only became aware of them [biological weapons] when the enemy drew our attention to them by repeatedly expressing concerns that they can be produced simply with easily available materials."¹² Other reports widespread in the media alleging efforts by al-Qaeda affiliated groups located in Europe to produce the toxin ricin are all apocryphal. In addition, an extensive series of detailed studies was carried out and was intended as a sequel to the 2000 volume *Toxic Terror*.¹³ The studies surveyed over a dozen active international terrorist groups – the PKK, IRA, Hezbollah, Hamas, Tamil Eelam, FARC,

AIG (Kashmir), etc. In each case there existed a record in the public media claiming either interest in or actual use of biological or chemical agents by the group in question. The studies demonstrated that not a single group had attempted to produce biological agents.¹⁴

The events or efforts described above, in 1984, 1990-94, 1997-2001, were followed in September and October 2001 by the dispersal through the U.S. postal system of a purified dry-powder preparation of *B. anthracis*. The source of the preparation came from within one or more of three institutions at the very



heart of the U.S. biodefense program: the United States Army Medical Research Institute for Infectious Diseases (USAMRIID), the laboratories of the U.S. Army's Dugway Proving Ground, and a DOD and CIA contractor, the Battelle Corporation. The person or persons who carried out this work was highly qualified, with decades of technical experience, access to the most virulent *anthracis* strains, and optimum working conditions of containment. The FBI has identified a 27-year veteran of USAMRIID as the perpetrator, an identification that is plausible and likely.¹⁵ If not for this event the world would still be waiting for a true national or international terrorist organization to be

able to produce and use a BW agent. The 2001 events in the United States were not on a continuum with the efforts of Aum Shinrikyo and al-Qaeda. The Amerithrax perpetrator(s) was an outlier, both in source and in competence; it was not the "terrorist" actor everyone had been invoking and predicting.

Between 1990 and 1995 the U.S. government learned of the very significant Soviet and Iraqi BW programs, as well as the efforts of the Aum group. And after Craig Venter provided President Clinton with a fictional "Biothreat" thriller and enjoined him to read it, the president convened a panel of experts in 1996 to advise him regarding the threat of bioterrorism. Nevertheless, between FY 1997 and FY 2001 the federal biodefense budget was only increased by about \$100 million per year, doubling from roughly \$440 million to \$880 million. However, following 9/11/2001 and the Amerithrax events in the two months that followed, Congress raised that expenditure in FY 2002 to some \$4 billion per year.

Between FY 2002 and FY 2011, the U.S. government appropriated approximately \$70 billion for this purpose, with routine increments of \$6-7 billion per year.¹⁶ The magnitude of the expenditure was largely unwarranted. At best only 18-20 percent of the sum can be considered applicable to "dual use" benefits, the refurbishment of the U.S. public-health infrastructure.¹⁷ The rest is devoted to "select agents" – those pathogens historically or theoretically of use as BW agents. This is an enormous misappropriation of resources given the comparative statistics of mortality due to the incidence of chronic infectious disease in the United States and worldwide.² Nevertheless, a small coterie of individuals constantly calls for increasing these expenditures still further.

If we draw together some important points, we find that:

- The proliferation of state BW programs was relatively limited for 40 years. Although much is known about the nuclear weapon development and acquisition programs of countries like North Korea and Iran, virtually nothing is known about what they may or may not have been doing in regard to biological weapons.
- The Iraqi BW program failed between 1975 and 1986-87 until researchers who had been sent to Europe to obtain graduate degrees returned.
- The BW development efforts of Aum Shinrikyo in Japan failed.
- The BW development efforts of al-Qaeda in Afghanistan similarly failed.
- The *B. anthracis* spore preparation used in the United States in October-November 2001 was prepared by highly qualified professionals working in a U.S. government facility or facilities.
- The gross exaggeration of the threat of bioterrorism by U.S. government officials and biodefense advocates has done more than lead to the misappropriation of funds and misallocation of priorities. It is counterproductive in that it has led to *soliciting* the interest in BW by international terrorist organizations and the proliferation of BW expertise and infrastructure domestically.

Conferences of States Party to the BWC to review the functioning of the treaty have been held every five years since its entry into force in 1975, with an additional Special Conference in 1994. The Seventh Review Conference (RevCon) will take place in December 2011. As early as 1985, several West European nations sought to address the total lack of verification capability in the BWC. However, it was a prime tenet of DOD officials in the Reagan

administration that verification of the BWC was impossible, and that establishing an inspection system would only “lull” the United States into a false sense of security. At the same time, the administration carried out its own small spurt of biodefense funding, overseeing a six-fold increase between 1980 and 1986. The result at the RevCon was the establishment of five voluntary Confidence Building Measures (CBMs) for treaty members in order to enhance “transparency.” These came into play in 1987.

In 1991, with the massive changes taking place in the Soviet Union, West Europeans came to the Third RevCon even more determined to give the BWC strengthened verification capabilities. It was clearly understood by then that the Chemical Weapons Convention that was under negotiation would contain rigorous on-site verification procedures, and would include a Secretariat, just as the IAEA served for the NPT Treaty. However, the Bush I administration again blocked any serious moves towards verification, with the result this time of a two part “compromise”: three additional non-binding CBMs were added, for a total of eight, and a three-year deliberation titled the VEREX (Verification Experts) was approved to investigate modalities that might be used to provide some degree of treaty compliance among its states parties. The 1994 Special Conference concluded this process and shifted to a negotiation phase labeled the Ad-Hoc Group, (AHG) which met from 1995 to 2001. By now it was well understood that the Soviet Union, Iraq and South Africa had all had offensive BW programs in violation of the BWC, in the Soviet case, a massive program.

During the AHG deliberations Iranian and Russian positions did little to facilitate the negotiations, and the United States, under the leadership of an ambassador to the negotiations in Geneva who was a holdover from the Reagan and Bush administrations and who fiercely opposed BWC verification, successively whittled away the strength of the verification provisions being

negotiated. West European allies reluctantly acquiesced to every dilution in order to keep the United States “committed to the process.” In a unified démarche to Washington in June 2001, the West Europeans stated: “The European Union has already accepted a lot of compromises in order to meet the concerns of the USA, especially on the declaration of biodefense programs and facilities, on the declaration of production facilities other than vaccine ones, as well as on the provisions related to the conduct of on-site activities.”¹⁵ The main U.S. consideration at this point was safeguarding the already burgeoning U.S. biodefense program, which was already initiating problematical research. In particular, genetic modifications and advanced dispersal techniques and delivery systems were investigated as “threat assessment.” It was argued that the capabilities that might be used to attack the United States in the future by a BW possessor were being investigated. At times such work raised issues of BWC compliance within U.S. government agencies.¹⁶ The European appeal was disregarded.

The Chairman of the AHG presented the negotiating states with a “Composite Text” for the verification protocol in a culmination of five years of negotiations. But in July and November 2001 under the new George W. Bush administration, the United States stated that it would not support the draft protocol and would not negotiate to arrive at a verification protocol any longer.¹⁷ Ironically, the United States stated that the verification provisions arrived at were too weak to achieve their purpose, a situation that was the result of years of U.S. dilutions. Ten years of discussions were effectively scuttled. The West Europeans collapsed within hours. The most that they could achieve was to convince the United States to agree to a continuation of Review Conferences and an interim “intersessional process” of annual meetings, which would have no authority to take decisions. These meetings began in 2003 and took up numerous subjects that interact tangentially with the BWC but religiously avoided any discussion of the central issue of “verification” and compliance with the BWC. The achievements of this process have been marginal.

Ten years have now passed since 2001. The Obama administration has been timorous, if not disinterested in BW arms control. Most observers profess that tackling verification or compliance head on is too difficult. In 2009, Canada tabled a paper in Geneva on behalf of a group of seven nations referred to as the JACKSNNZ (Japan, Australia, Canada, Republic of Korea, Switzerland, Norway, New Zealand) that was far in front of the U.S. position on the question of compliance. BW arms control advocates struggle to formulate devices and new terminologies to approach the taboo but central issue of treaty compliance. In an address to the UN General Assembly's First Committee on October 4, 2011, the U.S. delegate stated: "Compliance with treaties and agreements is a central element of the international security architecture and critical to peace and stability worldwide."²⁰ However in regard to the BWC, the United States would "focus on new ways to enhance confidence and compliance through richer transparency, more effective

implementation, an improved set of confidence building measures, and

cooperative use of the BWC's consultative provisions." That is, the United States would approach BWC treaty compliance only through peripheral measures. If the U.S. government continues to avoid the central issue of BWC compliance, it will be a matter of what the Europeans and the JACKSNNZ are interested in or capable of achieving in the face of U.S. reluctance as well as obstruction by other states. ■

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