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Milton Leitenberg and Raymond Zilinskas, *The Soviet Biological Weapons Program: A History*. Cambridge: Harvard Univ. Press, 2012. Pp. xvi, 960. ISBN 978-0-674-04770-9.

Review by Andrew Burtch, Canadian War Museum ([andrew.burtch@warmuseum.ca](mailto:andrew.burtch@warmuseum.ca)).

Milton Leitenberg (Univ. of Maryland) and Raymond Zilinskas (Monterey Inst. of Int'l. Studies) take aim at the origins, extent, and legacy of the Soviet Union's biological weapons (BW) program from 1928 to 1991 and the murky details of Russian "biodefense" arrangements since then. The extensive, meticulous research that went into *The Soviet Biological Weapons Program* is couched in terms more akin to a forensic accounting or weapons' inspector's report than a typical narrative history. This sober, compelling study is particularly important because, apart from papers in scientific journals and the testimony of former BW researchers, little has been written about the history of BW in the USSR, owing to the (understandable) Cold War preoccupation with nuclear weapons.

Both authors bring to bear decades of expertise in their analyses of weapons, especially biological weapons, proliferation. Leitenberg was the first American to work at the Stockholm International Peace Research Institute as part of the team that wrote a seminal and influential review of chemical and biological weapons in the 1970s. Zilinskas, a microbiologist and presently director of a Chemical and Biological Weapons Nonproliferation Program in Monterey, participated in two biological warfare inspections in Iraq in 1994 with the United Nations Special Commission charged with investigating the Iraqi weapons of mass destruction program.

The Soviet Union's BW program lasted longer, involved more industrial facilities, consumed more resources, and maintained greater secrecy than any other such program in the world. Identified here are two distinct phases in the program: the first, between 1928 and 1970, entailed isolating and culturing bacterial and viral agents found in nature. The second, beginning in 1972, involved the use of genetic engineering to make existing pathogens even more virulent and deadly.

The Soviet BW program employed at its peak some sixty thousand scientists, engineers, medical specialists, and supporting staff at both civilian and military sites across the USSR, all in flagrant violation of the 1975 Biological and Toxin Weapons Convention (BTWC). Determined Soviet defense officials thwarted the later efforts of Mikhail Gorbachev and Boris Yeltsin to revisit BW research during and after the dissolution of the Warsaw Pact.

The Soviet program originated in the traumatic aftermath of World War I, the Bolshevik Revolution, and the influenza pandemic of 1919, which inflicted as much damage on civilian and military populations as did bayonets and bullets. Suspecting that the Germans were developing a BW program in the 1920s and 1930s, the Soviets began to assess the offensive and defensive potentials of weaponized versions of plague, anthrax, tularemia, botulism, and encephalitis, among others. This program survived Stalin's purges (arrested scientists were forced to work in laboratories in the Gulag).

While the USSR did not suffer a biological attack during World War II, the extent of the brutal Japanese experiments in China both convinced the Soviets of the threat posed by bioweapons and furnished intelligence useful to their own postwar BW program. The atmosphere of mutual suspicion between the Soviet Union and the United States, which also maintained a BW program, ensured the continuation of the program throughout the Cold War.

The most threatening Soviet scientific breakthroughs, however, came only after the emergence of genetic engineering. Even as the Soviets officially condemned biological weapons, the Politburo's Central Committee authorized new civilian and military research facilities to develop genetically-engineered pathogens. This network, called *Biopreparat*, encompassed the *Ferment* ("enzyme") program, which sought, for example, to make lethal biological agents resistant to antibiotics and to improve aerosol delivery (67-71).

The work was conducted in secret, ostensibly civilian facilities alongside legitimate research projects. Among the most frightening creations of the *Ferment* program were anthrax spores that could infect already vaccinated lab animals and a version of legionnaire's disease that caused a host's immune system to attack nerve cells, inducing "an illness similar to multiple sclerosis, but with a quick death" (703).

The BW program, like other weapons-related scientific endeavors, exacted a human cost. Several outbreaks of viral and bacterial infections linked to Soviet production facilities are discussed. The most serious occurred in April 1979, when human error at a compound at the Scientific Research Institute of Microbiology in Sverdlovsk led to a release of anthrax spores over the city.

The problem that arose was that no one could figure out how to convey information to, for example, local health authorities without breaking strict secrecy rules. Due to those rules, no civilian Communist Party or municipal official in Sverdlovsk knew that BW agents were being produced within Compound 19, and the MOD [Ministry of Defense] did not wish this fact to become known, even at the expense of possible civilian casualties. The generals probably were hoping that the escaped particles would blow away and no one would be the wiser. (106)

The exact number of deaths was never officially released, but Russian sources, including former BW scientists, place it at sixty to one hundred. The Sverdlovsk outbreak provided clear, irrefutable evidence that the USSR was in fact maintaining an offensive BW program, in direct contravention of the BTWC. The Soviets tried to claim that dogs (!) caused the disaster by dragging tainted meat about the city, and even today Russian officials have not admitted responsibility, as recently as 2001 suggesting that American CIA saboteurs had spread anthrax at bus stops. The Sverdlovsk incident had serious repercussions not only for public health, but also for international stability, as US lawmakers lost all confidence that the Soviets could be trusted to limit their strategic weapons stockpile (423-42).

The authors pointedly ask why the Soviet Union went to such great expense to develop in conditions of extreme secrecy BW agents that, in a "hot war," would have been overkill, assuming their delivery systems even survived the initial nuclear exchange. Other projected uses of the Soviet BW arsenal included acts of sabotage (why, then, such an enormous stockpile?) and as an equalizer in a conflict with the Chinese, with their big advantage in military manpower, or with NATO forces in Europe—a likely scenario since the Soviets lacked the means to attack the United States directly with such weapons.

Two rationales for the size and persistence of the Soviet BW program are proposed here: first, that officials in the USSR did not believe the United States had actually dismantled its own BW program, and, second, that, in the byzantine Soviet system, the MOD was unwillingly to relinquish any military asset acquired during the Cold War, even after the years of diplomatic rapprochement under Gorbachev. By the time Gorbachev took an interest in the BW program, he lacked the authority to dismantle it. When Boris Yeltsin outlawed BW activities, stonewalling "old hands" frustrated the international movement toward arms control inspections and verification. As for Vladimir Putin's Russia, the authors are reduced to wishful thinking: "Since we do not actually know what is and has been taking place within the three R[ussian] F[ederation]-MOD facilities since 1992, perhaps the situation is better than might be feared" (678).

*The Soviet Biological Weapons Program* is a book by and for specialists. Even seasoned Cold War scholars may be overwhelmed by its array of acronyms and scientific terms, complex civil-military interconnections, and military, scientific, and political characters. Nonetheless, Leitenberg and Zilinskas have made a most salutary contribution to the scholarship on the Cold War, weapons proliferation, the history of science, and international relations. Despite the frequent absence of reliable documentation and the thick veil of Soviet secrecy, denial, and misrepresentation, they have painstakingly compiled the best currently available evidence<sup>1</sup> in a comprehensive resource for anyone seriously interested in the Soviet Union's BW program.

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1. Including interviews with and the correspondence and memoirs of former Soviet scientists, engineers, soldiers, and MOD officials, as well as declassified documents from the United States, United Kingdom, and former Warsaw Pact countries, records of congressional hearings, and various other published material. The breadth and depth of this research are evident in the book's 150 pages of endnotes.