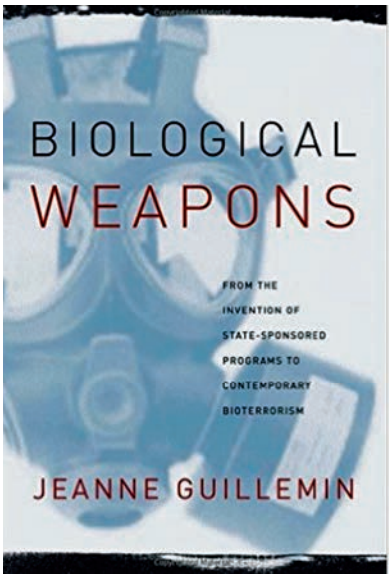
# Book Review




**Jeanna Guillemin,** *Biological Weapons: From the Invention of State-sponsored Programs to Contemporary Bioterrorism, (New York, Columbia Word Press), 2002, 258 pages*

By **Delson Ong**

## INTRODUCTION

*Biological Weapons: From the Invention of State-sponsored Programs to Contemporary Bioterrorism* spells out the evolution of the developments in biological weapons through the centuries, from the state-sponsored programmes in the twentieth century, to the existing threat of bioterrorism today. Covered in this book are the contributions made by several key figures in the field of biological and chemical weapons development and research, as well as their ideals and rationales for doing so. By bringing in historical context to our present day concerns of this issue, the bulk of the book's focus is about the programmes and protocols that existed in the past, both for and against the use of biological and chemical weapons during wartime. Throughout the book, the author provides the reader with a smooth flowing picture of the developments in the field of biological weapons from past to present, which would serve as an easy read for many readers.

The early chapters of the book cover the events before the existence of the first ever biological weapon in the world. Because of war, countries have been constantly searching for advancements in technology that would give them the edge they need in order to secure victory. Even before the first biological weapon was invented, numerous scientists had already begun to explore using biological weapons to achieve this very objective. With serious expectations of this possibility, countries like France, Japan, the United Kingdom (UK), the United States (US) and the Soviet Union have thus invested

a great deal of resources in the area of Research and Development in the field of biological weapons research. However, over the years, legal and technical restraints, civic awareness as well as the decisions of key political actors and military leaders have kept this innovative class of weapon from the destructive strategic uses that its advocates envisioned—the mass killing of non-combatants as a means to victory.

It is without any doubt that countries possessing biological and chemical weapons pose a huge threat to others, and this has accelerated the creation and development of major weapon programmes. Prior to World War One (WWI), aerial warfare and long-range bombers inspired many scientists to consider the fact that biological agents could be used in a similar way to devastate civilians with disease. However, biological weapons are considered a menace to civilians, no matter who owns it and hence, certain protocols were put in place to prevent the use of such weapons in warfare. The 1922 Treaty of Washington, although unsuccessful, became the template for the much more effective 1925 Geneva Protocol, which currently consists of 132 member state parties.[1] The protocol prohibits the use of chemical weapons in warfare and has since expanded its range to include the use of biological weapons as well. But due to the vagueness in terms of protocol, member states were able to utilise the biological and chemical weapons as a form of retaliation if they are first attacked by such weapons. This flaw in the protocol would come back to haunt those who support the cause, as many countries look to this as an excuse to be in possession of such weapons.

## DOUBLE-EDGED SWORD

What makes biological weapons and agents so inherently dangerous is that troops needed to be protected against infectious disease agents that the enemy is going to use on them and at the same time, those that are being used by their fellow men. In a biological weapons programme by Frederick Banting, one of the uses of germs weapons he put forth was contaminated rifle bullets. The idea seemed legitimate at first, but on hindsight, the handling of these bullets complicates matters. It would be highly difficult to use due to the ease of contamination by the user, hence making this form of weaponry less favoured amongst soldiers.

However, the appeal of a biological and chemical weapon is not so much of it being different from the conventional arms that soldiers have been using. Rather, it lies in its ability to prevent the attacker from being seen, while still causing mass casualties. This application of scientific and technological knowledge is dubbed by many scientists as the 'humane alternative' to high explosives, which tears enemies limb from limb, as it avoids the battlefield blood and gore. From the military's point of view, biological weapons are mainly used to disorganise industrial areas behind the lines of army camps, or the camps themselves, resulting in huge losses of valuable plants, animals and food crops.[2] After all, defending soldiers against possible biological weapons attack is part of the mandate of all biological weapons programmes.[3]

Despite this, numerous political actors have stepped forward to voice their disapproval against using such weapons for warfare. President Franklin Roosevelt, a strong believer that biological and chemical weapons

were uncivilised, stood strong in his opinion that they should never be used at all. And, contrary to popular belief, military leader Adolf Hitler was on the same page as President Roosevelt as well. Although known for his ruthless killings by using poison gas, Hitler was averse to the use of such weapons. Others such as President Bill Clinton and Admiral William Leahy were also vocal in their opposition to weapons that were targeted at civilians.

If military and political leaders disapprove of using such weapons, why then do biologists and physicists devote their energies to developing weapons whose main target are civilians, with the sole purpose of taking lives?

In 1921, France began its first biological weapons programme, which was led by Auguste Trillat. Trillat, having conducted multiple experiments on airborne transmission of bacteria prior to his leadership stint, was keen on utilising France's retaliatory power as a form of defence, and has advocated the research on various germs and bacteria as potential candidates for weapons. However, much of Trillat's work in the programme was halted due to France's commitments to the Geneva Protocol and later destroyed when Germany occupied France in 1940.

In 1942, two American Biologists by the name of Theodor Rosebury and Elvin A. Kabat published a written document entitled 'Bacterial Warfare', and in it they described germ theory, the potentials of biological weapons as well as how to defend against them. Although it was written decades ago, the document is still widely discussed by scientists today.

The biologists, like Trillat, had the same sentiments about the airplane being the most useful means for dissemination of infective agents. But what made them different from Auguste Trillat was that the biologists believed that biological weapon research should be conducted for defensive purposes and deterrence, not as an offensive weapon. In their document, dubbed the 'Rosebury-Kabat report', they compiled a list of popular bacteriological agents that were suitable candidates for research. Taking into account host range, severity of symptoms and infectivity, Bacillus anthracis emerged on the top of the list as the most important agent for further research. Besides that, the list also briefly included diseases that were targeted at crops and animals. Rosebury and Kabat advised that experiments needed to be carried out on the listed agents to find out what they could do, and how to defend against them. They also warned, that should these pathogens be released into the outside world, it would be very difficult to check and eradicate.

Indeed, there were certain scientists who believed in both the offensive and defensive capabilities of biological weapons, and not just the former. Maurice Hankey was an influential civil servant during the inter war years, and had served as secretary to the British War Cabinet. It was because of him that the British did not confine themselves to purely defensive measures against biological warfare. Acknowledged as the founding father of UK biological weapons scientists, Hankey had a huge influence behind-the-scenes on the British defence policy as well. In 1938, the period of time when "politicians were obsessed with the problem of civilian casualties," Hankey took advantage of this obsession and turned it into what would be the

driving force for the creation of the Emergency Hospital Service in Great Britain. The service would eventually become an integral part of a postwar framework for nationalised healthcare.

Another figure to note would be Frederick Banting, a British medic from WWI and the founder of insulin which saved the lives of millions of diabetics. He too believed in the need for the British to establish themselves in the field of biological weapons both offensively and defensively due to the fact that Germany, Italy and Japan would wage war against Great Britain. Seeing the need to convince people who are capable of making a difference, Banting took the liberty of travelling to England after the German invasion, in hopes that he would be able to persuade influential scientists to start a biological warfare programme. And his reason for doing so—the Germans, having experimented on biological weapons, would not hesitate to use them should the need arise. Hence the UK should be prepared and armed with retaliatory powers of the same kind. Through the weapons programme that Banting created, he was able to evaluate treatments to counteract the biological agents, understand them and even predict the different ways of dispersing them. One of his findings includes the sending of bacteria via envelopes, which actually took place in 2001 in the US, shortly after the September 11 attacks.

## PUBLIC HEALTH VS. BIOLOGICAL WEAPONS

The aims of public health are contradictory to that of biological weapons. For public health, the main goal is to discover and understand as much as possible about all the factors that cause diseases to spread, so as to break the causal chain and keep the civilians out of harm's way. On the other hand, biological weapons are all about developing diseases as a weapon, the reverse of the goals of public health.[5] This was illustrated in the years preceding WWII when public health advocates went one way, while civilian biologists of high calibre went on a distinctively different one. The advocates were concerned with promoting the general strengthening of British healthcare, because to them, it is only logical that the protection of civilians against biological weapons would be centered on public health reinforcement. On the other hand, the civilian biologists joined the military to develop biological weapons.

The final few chapters of the book covers present day issues about bioterrorism, with the area of focus largely on the US. Although there have been numerous protocols and policies erected to restrict the use of biological weapons, the effectiveness have been limited, particularly for the US due to their ignorance and inability to adhere to and abide by the terms. If the states were to exploit its scientific and technological prowess, it could pose as one of the most serious problems that humanity has ever faced. Moreover, without any pressure on member states of any given protocol to agree to verification measures, the opportunities for terrorists to attack would increase worldwide. It is therefore up to nations to come to a common consensus to improve their control of toxin and biological agents, a necessary component of international co-operation so as to ensure that they do not fall into the hands of terrorists. From a bird's eye view, there should be negotiations between nations to achieve a total ban of biological and chemical weapons.[6]

The presumption by the US that the threat of biological weapons is not apparent within its borders may be true, but the domestic crimes (such as the September 11 attacks and the anthrax letters attack shortly after) point to the fact that risks still exist within the country itself.[7] History tells us that without long term commitment and nonproliferation from member states, to achieve a set target would prove to be a daunting task. Right now, we are gambling with our future.

## CONCLUSION

There may be little to no threats presented by biological and chemical weapons, but that does not give us the liberty to let our guards down. From the book, it is apparent that there is a new generation of biological weapons being developed. Indeed, the weapons are constantly evolving. And if pursued with vigour, these weapons could potentially make the US a technological powerhouse, especially when it comes to human control and domination. Despite the many differing viewpoints on biological weapons and its usage, the book is able to provide readers with a balanced viewpoint. It paints a clear picture of biological weapons development throughout the course of history, and by presenting both sides of the argument while constantly maintaining a neutral standpoint, this book is definitely an ideal choice for many readers.

## ENDNOTES


1. United States biological weapons program, Wikipedia, https://en.wikipedia.org/wiki/United_States_biological_weapons_program
2. Jeanna Guillemin, Biological Weapons: From the Invention of State-sponsored Programs to Contemporary Bioterrorism, (New York, Columbia Word Press), 2002, 30.
3. Ibid., 36.
4. Ibid., 44.
5. Ibid., 37.
6. Statement on Chemical and Biological Defence Policies and Programs, Wikipedia, https://en.wikipedia.org/wiki/Statement_on_Chemical_and_Biological_Defense_Policies_and_Programs
7. Jeanna Guillemin, Biological Weapons: From the Invention of State-sponsored Programs to Contemporary Bioterrorism, (New York, Columbia Word Press), 2002, 189.