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Hist 340

Biological Warfare

in America

Biological warfare (BW) is the utilization of pathogens, which are

infectious microorganisms such as viruses, bacteria, or fungi, as well as natural toxic compounds in order to gain an advantage over or disable/kill an enemy. Biological warfare may also be known as "bioterrorism" and can be applied to a single person, a group of people, animals, or vegetation. Biological weaponry has the benefit of being able to deliver attacks through means of air, artillery, vectors, consumption, or direct contact.[1] Quality biological weaponry is described as that which is economical, easy to produce, and potent both within and outside of the laboratory. Biological weapons typically fall under one of two main categories, conventional and designer. Conventional biological weapons exploit diseases that naturally occur in the human body (such as anthrax or yellow fever), whereas designer weapons are specifically manufactured in the lab. Designer weapons are generally more potent, durable, and much harder to counteract.[2] The United States has had experience with biological weapons since it was but a small, budding nation, but as time goes on, this biological approach of violence and terrorism shows to be of increasing interest in our country.

The first documented practice of BW in the United States may have been during the French and Indian War, using smallpox. Smallpox is a virus that may enter the body through the skin or respiration. Once it has entered into the host cell, it multiplies, inhibiting the host cell from properly functioning and synthesizing its own DNA. This results in failure of the body's immune system against the virus. Once the virus has passed its incubation period of about two

weeks, the host will suffer from aches, fevers, and nausea. A few days later, rashes will develop, spread, and turn into blisters which will burst and likely scar the victim. The death rate for those that contract smallpox is estimated to be about 30-50%.[3] A letter from Charlestown in 1760 demonstrates the power of the disease at the time mentioning, "our distress is great, and greatly aggravated by the smallpox, which spreads among us. Some thousands are now under inoculation, and many taken down in the natural way; of the latter a pretty large portion has died. We shall know the effects of the former in about ten days hence. These calamities united, throws us all into great confusion, and we shall feel the effects for a long time."[4] Lord Jeffrey Amherst served as the commander in chief for the American colonies during the French and Indian War. In 1763 during Pontiac's Rebellion , the state of Fort Pitt was looking grim as local Native Americans were engaging in burnings and forcing colonists to seek refuge with one another in a small, crowded area. Simeon Ecuyer, the officer in charge of Fort Pitt, wrote a letter to Henry Bouquet describing the predicament on June 16th, who in turn passed the news onto Amherst by June 23rd. On June 24th, Turtle's Heart and Mamaltee of the Ohio Potawatomi Indian Tribe came to the fort in hopes of convincing the British to leave. After they failed in doing so, they asked for provisions and booze for the journey back home. Trader, William Trent wrote, "Out of regard to them, we gave them two blankets and a handkerchief out of the Small Pox Hospital. I hope it will have the desired

effect." These items had belonged to soldiers that died from the disease. After a series of exchanged letters between Colonel Henry Bouquet and Jeffrey Amherst, by July 17th, the two had agreed to continue this mode of warfare in hopes to annihilate all Native Americans.[5] British traders joined in on the efforts by taking blankets and clothing from a hospital treating smallpox patients and delivering them to the natives.

Similar tactics showed up again in 1775 during the American Revolution. Thomas Jefferson and Benedict Arnold had accused the British of infecting their troops with smallpox, probably as civilians socialized with the troops. This maneuver aided in Arnold's decision to retreat from his efforts to capture Quebec. Once George Washington received intelligence that the British planned on infecting American troops he proclaimed, "The information I received that the enemy Spreading the Small pox against us, I could not Suppose them Capable of–now I must give Some Credit to it, as it made its appearance on Severall of those who Last Came out of Boston." By 1777, Washington was sold on the idea that all troops should be inoculated against smallpox.[6]

On May 8th, 1980, the World Health Organization deemed smallpox as no longer a threat. Routine vaccinations had essentially eradicated the virus from Earth. Still, the disease is known to exist in two countries: in CDC research labs in the United States and as at least 20 tons of a super strain stockpile (created during the Cold War) in Russia. The WHO created a plan for both countries to

destroy their collections, but the plan was put on hold due to fears that other countries, such as North Korea or Iraq, may also have developed secret stockpiles. As a defensive act, it was proposed in 2000, that the US create a vaccination stockpile for their troops, yet instead they are just relying on the current vaccination stocks.[7] At this point, the virus would be deadly if it were to be released.

By 1898, it was clear that the sciences could be a particularly significant aspect in the development of warfare. The president of Harvard at that time, Charles William Eliot, stated, "No nation can succeed in war which has not developed in peace a great variety of mechanical, chemical, and biological arts." An article on President Eliot's ideas concluded with the following statement: "Modern warfare is largely a contest in efficiency in the scientific arts, and the nation that is deficient in that respect cannot hope to be successful."[8] These ideas will prove to be true as BW continues to emerge.

Rudimentary biological warfare remained alive in early American history, for example, Confederate soldiers poisoning the water of Union soldiers with decaying animal carcasses during the Civil War, but efforts toward major scale BW had not come into play until around the World War II era.[9] By the 1930s the U.S. had questionable thoughts on the effectiveness of BW and thusly had no BW program. An 18 paged paper published in the 72nd edition of *The Military Surgeon* in 1933 by Major Leon A. Fox further convinced the country that a

biological approach to warfare may not be very effective (with anthrax as an exception), particularly due to the ability to immunize, inoculate, and follow sanitation precautions.[10] However, Japan, Germany, Italy, the Soviet Union, Great Britain, France, Poland, and Canada all had BW programs. This fact caused the United States to rethink its lack of such a program upon entry into World War II.[1] Another factor considered was that research done by the Chemical Warfare Service indicated that the following 9 diseases could be used as a warfare threat: smallpox, dysentery, bubonic plague, yellow fever, cholera, tetanus, sleeping sickness, typhus, and influenza. Colonel James S. Simmons held a view opposing Fox's and was able to produce a report that convinced secretary of war, Henry Stimson, to assemble the Bacteriological Warfare Committee (WBC Committee) on October 1st, 1941. Four months later, President Roosevelt approved the proceeding of offensive and defensive research by the committee. The War Research Committee was also created in March of 1942 in order to deal with BW and George Merck of Merck & Co. pharmaceutical company was asked to serve as the head of the committee by President Roosevelt. Camp Detrick, created in 1943, was one of the mainstays of the biological warfare program. Here, the program blossomed to the 2nd largest scientific war project in America.[11] The U.S. program worked alongside the British and Canadian programs. Although never used, the British had tested an anthrax bomb on a sheep field that proved to lethally infect sheep up to 250 yards away from the

collision site. Also in 1943, as a retaliation technique against possible German BW attack, the British produced 5,000 linseed cakes with anthrax, ready to attempt to annihilate Germany's beef supply. By the end of WWII, although America had not used biological tactics, they were well prepared to do so. Immunizations against botulinus toxins were created at Detrick in enough quantity to immunize all U.S. troops. Also, knowing that Japan was engaging in BW against China, Roosevelt had indicated in a letter that he had intention to infect Japan's rice crop had the war not come to an end by mid-August of 1945.[12] Needless to say, the tactic proved unnecessary in the end.

Now that the U.S has been thoroughly introduced to the biological weapon, the 1950s was a time of working towards creating only the most effective biological weaponry. The ideal weapon would not infect beyond the target area and use the smallest amount of infectious agent in the smallest carrying particles while still being highly effective. One creation built in attempt to satisfy this criteria was known as the 8-ball. Its construction began in the late 1940s and was finished in 1950. The $715,468 project was a 131 ton sphere four stories high. This structure, proposed by Camp Detrick's chief of munitions Herbert G. Tanner, was built as a testing facility. The 1.25 inch-thick walls allowed it to be able to withstand biological bombings and the ample space within could simulate a real life target area, using a wide array (from rodents to primates) of animals as subjects. The animals were weaned into a comfortable behavior around the

testing area and once ready, were exposed to an aerosol of the latest biological agent. The first standardized bio-weapon for U.S. military use was created for the Air Force. They desired a number of options available as arsenal, with a bio-weapon as one of them. Although anthrax would have the largest shelf life with the least amount of care needed (and therefore a great choice), the Army Chemical Corps chose *Brucella suis*.[13] *Brucella* is a mildly infectious disease that can cause fever, depression, urinary troubles, aches, weight loss, and muscle spasms. The sickness that results will usually last a few months, but may exceed to over a year.[14] This particular microbe was chosen for those mild properties, mild meaning that infection did not ordinarily lead to death. Although it grew very well and very quickly, the shelf life would have been around a few months. Being the only bio-weapon offered though, the Air Force accepted it and hence the *Brucella* bomb started being manufactured in 1951. After a few test runs, indicating that the bomb would be effective, the U.S. was biologically prepared for war by the summer of 1952, just in time for use in the Korean War.[15]

Incidentally, it was 1952 that the United States was first accused of waging biological warfare by Bak Hun Yung of North Korea and Zhou Enlai of China; they had both issued complaints to the UN (Enlai, two days after Yung) about the U.S. experimenting with BW strategy. Both Chinese and Korean armies began noticing in early 1952 that U.S. aircraft had been dropping strange items, such as leaves, soybean stalks and pods, feathers, cotton, and packages or

bombs filled with live insects, or decaying meats. At the same time, doctors were noting strange illness outbreaks (diseases that had not been seen in the region for decades) as well as species of plants and animals that were not native to the region. Naturally, they were able to piece the puzzle together and realize what the U.S. was up to. The Medical Headquarters of the Korean Army began to analyze the insects being dropped upon them and had found that a flea sample tested positive for plague bacillus. Additionally, the Chinese army had found that both U.S. and South Korean troops were inoculated against the disease. It had become apparent that not only was the U.S. trying to create an epidemic outbreak, but they had defensively protected their own against their bacteriological tactics. By 1953, F-86 & F-84 jets, and B-26 & B-29 bombers would be seen dropping bomblets containing aerosols, vectors, insects, leaves, and spiders on a weekly basis. Insect examinations showed that they were infected with diseases such as plague bacillus, cholera, salmonella, meningitis, paratyphoid, and many others. Plant pathologist, Qiu Weifan discovered that the soybean plant components being dropped were infected with a fungus known as purple spot disease, which ruins the soybean plant. He concluded that it was an attempt to decimate the soybean crop so that it could not be exported. A memorandum to the U.S. secretary of defense showed that approximately $345,853,000 was spent on BW between the years of 1951-1953, a great deal larger than the $5.3 million that was estimated for 1950.[16]

Though BW during the Korean War may not have led to incredible victories, it still caused great upheaval world-wide. China and North Korea had felt terrorized and threatened enough to go to the United Nations with the issue. They also ended up dedicating lots of time, energy, and money to research all the items the U.S. had been dropping along with trying to treat the infected and prevent a deadly epidemic. Thusly, BW proved to have a significant impact. Furthermore, these bacterial bomb droppings may be seen as merely experimental. The U.S. seemingly possessed the ability to turn up the heat on the BW, causing an even larger influence, if they had wished to do so, even if that particular mode of warfare was frowned upon.

On March 15, use of BW by the U.S. army became officially acceptable with permission from the current president. A new regulation adopted by the National Security Council declared, "To the extent that military effectiveness of the armed forces will be enhanced by their use, the United States will be prepared to use chemical and bacteriological weapons in general war. The decision as to their use will be made by the President."[17] Later that year, the military launched Project CD-22, or Operation Whitecoat. This project took in about 2,200 Seventh-day Adventist volunteers from the army in order to test offensive biological agents on them. A popular example was the 1st test that began on July 12th. A small group of volunteers would be exposed to Q fever microbes through means of aerosol. Even the strongest of them became sick and infected, although

a couple that had previous exposure or inoculation were not affected. No one died, but the results were nonetheless exciting, as there was now proof that such a method would be effective on humans, not just animals.[18]

Shortly after Kennedy had began his presidency, BW continued to make advancements. For example, instead of using bombs to spread diseases, the Army was now into using spray nozzles, as detonating a bomb usually destroyed a good portion of the microorganisms. Also, they focused on less lethal agents and more on those which possessed incapacitating abilities.[19] It was a great time that all branches of the military took interest in, even the Navy claimed in 1965, "the United States must be constantly ready to wage defensive and offensive biological and chemical warfare as an integral part of national defense."[20] Sadly though, after much progress, Nixon's ban of offensive BW on November 25th, 1969 had caused a sort of stagnation of all these exciting improvements and projects. After months of debate and advising by the Senate Committee, Nixon released a statement indicating that offensive BW was unpredictable, and could result in worldly disasters and be a threat to health.[21] Instead, he claimed to advocate defensive research, such as immunizations and other modes of disease control. Meanwhile, in an attempt to make use of what Nixon did not mention, the Army had manufactured massive stockpiles of toxin-based weaponry that spanned thousands of acres in Pine Bluff. Much to the dissatisfaction if the army, Nixon proceeded to ban toxin use as well on Valentine's Day in 1970. He ordered the

destruction of all stockpiled weapons and the cleanup at both Pine Bluff and Fort Detrick, a project costing almost $11 million. The CIA cut a deal with the Army to save what weaponry they could for themselves before they were all destroyed. Nixon gave control of many of the facilities at Fort Detrick to the National Cancer Institute.[22] Furthermore, in 1972, the Biological Weapons Convention took place on April 10th among multiple nations. It is considered the 1st treaty to ban an entire weapon class, banning the production and stockpiling of both biological and toxin based weaponry. A protocol checking for BW in each nation was created and enforced during Clinton's administration, but suspended during Bush's due to the new administration's rejection of it. A new process was then created in 2006 to replace the failed protocol.[23]

In the 2000s, the main group in the United States still working with warfare type biological agents and toxins are the CIA. A couple of ongoing projects are mildly controversial as they seem to be borderline with the 1972 treaty. Clear Vision is a project in which they are reconstructing a Soviet Bio-bomblet. The CIA maintains it is strictly for research, education, and prevention of bio-weapon creation from other nations that could be used against ours, though. Project Bacchus is another ongoing research program in which small facilities are being built where bacteriological agents may be studied. Although approved by the Defense Department, it is still considered delicate territory. The CIA hopes to obtain the strong strain of anthrax that Russia

stockpiled during the Cold War. They argue that the 1972 treaty allowed Russia to do this and also desire to know how it was created and if they can create an effective vaccine against the strain.[24]

Biological Warfare in the United States had a fascinating run, and though may be questionably ongoing, can no longer function as a mainstream strategy. The 1972 treaty may help prevent BW attacks among nations, but there are always possibilities of nations violating or the treaty or being non participants looking to attack through biological means. Luckily, defensive measures are still in tact and promote a good defense against such possible attacks. BW still possesses the ability to cause devastation and will likely always be of interest within the U.S.

End Notes

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Proposal

Biological Warfare in America

The history of the development and uses of biological weaponry in the United States, starting with the spreading smallpox in the French and Indian War.

Primary

1) Boston Evening-Post, page [4], iss. 1281 Publication Date: March 17, 1760 Published as: Boston Evening Post. Location: Boston, Massachusetts Headline: Boston, March 17. 1760 Article Type: News/Opinion

2) Grand Forks Herald, page 2, vol. 17, iss. 279 Publication Date: September 21, 1898 Published as: Grand Forks Daily Herald Location: Grand Forks, North Dakota Headline: War and Science Article Type: News/Opinion

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General Leon A. Fox

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Location: Bennington, Vermont. Headline: History of the War in America

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Norbert Finzsch

2) Behind the Nixon Policy for Chemical and Biological Warfare

Matthew S. Meselson

3) Biological Warfare in Eighteenth-Century North America: Beyond Jeffery Amherst.

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Stephen Lyon Endicott, Edward Hagerman

2) Biological Warfare Against Crops

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3) Chemical and Biological Warfare: A Reference Handbook

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