

A History of Japan's Unit 731 and Implications for Modern Biological Warfare

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ABSTRACT

To prevent another biological warfare like the atrocious experiments conducted by Japan's Unit 731 during WWII, the research aims to discuss the history of Unit 731 and its experiments, as well as the post-war investigation led by the United States. Evidence of these inhumane experiments are listed and condemned, so are the investigators who help conceal their crimes. The analysis calls for a public exposure of the Unit 731 data and a global consensus on a ban of biological warfare in the name of scientific experiments.

Keywords: *WWII, War Time History, Japanese Invasion*

1. INTRODUCTION

Nowadays, COVID-19 mutations are identified in most countries worldwide. The scale and scope of these mutations could have a devastating effect on global pandemic control and vaccine development efforts. As COVID-19 evolves and spreads across communities of various backgrounds, the society faces the challenge to adapt and update our defensive methods promptly and adequately. Critical scientific evidence is needed to gain an in-depth and comprehensive understanding of COVID-19, such as its transmissibility and human-pathogen interaction. Comparing transmission and mutation data of COVID-19 with those from previous pandemics, such as the severe acute respiratory syndrome and the Middle East respiratory syndrome, a valid concern is raised in terms of how to prevent biological warfare leveraging agents like viruses. A closer examination of available evidence indicates that one historical event may hold the key to better control and management of infectious diseases like COVID-19: Unit 731.

A string of standard numbers, 731 has become synonymous with the Japanese armies in World War II. Within the history of human war, there are many bloody "demon forces" recognized as the most inhuman in history: Japan's 731 bio-attack armed forces throughout World War II. Since the Japanese armies entered Chi-na's land in 1937, millions of civilians deaths have been recorded. To achieve its evil ambition, Unit 731 based its work on the infinite pain of human prisoners. This

tragedy lasted until Japan's defeat in 1945, when its disgracing biological warfare efforts were permanently prohibited. Unit 731 started as a biological and chemical warfare research and development unit of the Imperial Japanese Army, and it secretly operated as an assembly line of weaponized diseases, which, if fully deployed, could lead to extinction [1].

2. UNIT 731: A DARK AND EVIL EXISTENCE

Unit 731, also known as the Ishii Unit, started doing experiments on prisoners through a series of different pathogens, including anthrax, plague, cholera, and several others. Unit 731's researchers injected viruses into prisoners to observe and record how the human bodies reacted to the viruses, until they die in enormous excruciating pain [2].

"The doctors lock victims inside a pressure chamber to see how much the body can withstand before their internal organs explode; prisoners were taken in a ground called Anda experiment: they were tied to stakes and bombarded with test weapons to see how effective the new weapons are. Planes sprayed the zone with a plague culture or dropped bombs with plague-infested fleas to see how many people would die" [3].

The crime began with physiologist Yoshimura Hisato, who was particularly interested in hypothermia, and then turned into a series of atrocious experiments. As part of a limb injury study, scientists immerse the prisoner's limbs in a box filled with ice and lock them until the body

freezes solid and a layer of ice forms on the skin. According to an eyewitness, when struck with a walking stick, the limbs made a sound similar to a wooden board. Hisato then tried different ways to reheat frozen appendages quickly. Sometimes he soaked the patients' limbs in hot water, sometimes close to open fire, and sometimes prevent the patients from receiving treatment to see how long it would take for his blood to thaw [4].

Unit 731 started out as a research unit, investigating the effects of disease and injury on the fighting ability of an armed force. One element of the unit, called "Maruta," known as "logs" in Japanese, took this re-search a little further than the usual bounds of medical ethics by observing injuries and the course of disease on living patients (Stockton).

"Vivisection, for example, is the practice of mutilating human bodies, without anesthesia, to study the operations of living systems... Finally, when a prisoner's body was used up, they would typically be shot or killed by lethal injection, though some may have been buried alive. None of the Chinese, Mongolian, Korean, or Russian prisoners assigned to Unit 731 survived their confinement" [5].

Vivisection is an inhuman crime. The subjects were chosen from Chinese residents and war criminals from other countries, and the key point of this operation is to ensure that the anatomical object is absolutely conscious. Anesthesia is forbidden in this process, because Unit 731's researchers believed that research data after anesthesia became untrue. It's hard to imagine this kind of crime on earth today, but during the time of WWII it was a must-have skill for all Unit 731 doctors [6].

Some experiments are conjured to test firing range of weapons. Wound patterns and penetration depths were then compared on the dead and dying inmates [7]. Other experiments are designed to test the endurance of human life.

"Heavy objects were dropped onto bound prisoners to study crush injuries, subjects were locked up and deprived of food and water to learn how long humans could survive without them, and victims were allowed to drink only seawater, or were given injections of mismatched human or animal blood to study transfusions and the clotting process" [8].

These experiments have killed thousands of research participants, as well as inflicting horrible harms to others [9] It is estimated that the total death toll from Unit 731's operations reached between 270,000 and 300,000 people [10].

In late July 1945, time of the victory of the anti-fascist armies, 400 to 500 Chinese were still detained in the prison of Unit 731. To eliminate the evidence of their crimes, Unit 731 turned on the poison gas switch on August 9, 1945, according to the order of the Japanese

Kwantung Army, and all the detainees were poisoned. Evidences also showed that Unit 731, before fleeing, released large quantities of rats and fleas and the scattered squirrels infected with *Yersinia Pestis* from their labs. They spread to the villages in Yitai yu-an, Hou two Dao Gou, Higashi Ko and other towns in 1946, causing the death of many innocent people [11].

"To this end, Unit 731 cycled through tens of thousands of prisoners at several facilities across Manchuria, which had been occupied by imperial forces for years. Inmates of these facilities were infected with several of the most lethal pathogens known to science, such as *Yersinia Pestis*, which causes bubonic and pneumonic plague, and typhus... To breed the most lethal strains possible, doctors monitored patients for rapid onset of symptoms and quick progression." [12]

According to history records, many of these experiments were conducted with an aim to develop treatments for medical problems in the Japanese Army. An 18-page report on these experiments was later released after war, justifying the purpose while recording these atrocious crimes. Yet nothing could reverse the fact that to produce these findings, thousands of innocent human subjects suffered and died.

"The medical findings saved many Japanese lives. For example, Unit 731 proved scientifically that the best treatment for frostbite was not rubbing the limb, which had been the traditional method, but rather an immersion in the water a bit warmer than 100 degrees -- but never more than 122 degrees." [13]

3. POST-WAR INVESTIGATIONS

After the war, Japanese scientists and the government joined forces to plan their response to the US investigation and realized that the interest in their crimes gave them a powerful bargaining chip. Like Scheherazade in the story of the Arabian Nights, Japanese interrogators are good at revealing enough information in each interview to leave unspoken content to show the value of their continued freedom to the interests of the United States.

Bacteriologist Lt. Col. Murray Sanders was the first investigator from the biological warfare unit of the Detrick Battalion in Maryland to go to Japan. In September 1945 and October 1945, several interviewees told Sanders that the Japanese military was only engaged in defensive research because biological warfare was "clearly anti-human." The repetition of these words indicated that the interviewees' scripts were pre-arranged. Sanders trusted his translator, Lt. Col. Ryoichi Naito. He didn't realize that Naito had served in the 731 army and deliberately manipulated the interrogation. In an interview in 1983, Sanders admitted that he had been "cheated" during a nine-week investigation. [14]

The second American investigator, Lieutenant Colonel alvo Thompson, was also unable to extract correct information from the Japanese, but when he left in May 1946, he became increasingly convinced that the truth had been concealed. General Ishii told Thompson that biological warfare was "inhumane" and (if the Japanese did such research) would "tarnish the emperor's virtue and kindness." This is a clear statement from Japan that biological warfare experiments are immoral, no matter how cynical they are. [15]

The last one, American scientist and investigator, Dr. Norbert H. Fell, was a civilian employee of the Detrick battalion. He arrived in Japan in 1947. Fell is more knowledgeable than his two predecessors, and their reports alert him to fight against the deception. After taking to Fell, Ishii's team finally decided to acknowledge that human experiments were actually carried out to develop biological weapons. From April 21 to April 22, 1947, Fell interviewed that the middle-man they chose was an "outstanding businessman." Kamei, a doctor at Columbia University who worked as an interpreter during the investigation conducted by Murray Sanders, said that his efforts to persuade the Japanese to reveal everything had finally paid off. Re-ferring to the interrogation of a Japanese officer, Kamei told Fell, "Zengta admitted to me that the experiments were carried out on humans... The personnel involved in these human experiments vowed never to divulge information. However, I believe that if you deal with the investigation from a scientific point of view, you can get detailed information." Kamei also told Fell previously that the Japanese had lied that all documents had been destroyed, and the surviving officers of Unit 731 had only vague memories of the experiment. Now the Japanese changed minds and assured the Americans that they had valuable information in exchange for immunity from prosecution. [16]

As a result, Fell became the first American scientist to be directly aware of activities that clearly constituted war crimes (assuming that human experiments were carried out without any apparent voluntary consent). Adopting a proposal from the Japanese, Fell went on to tell each of those questioned that "the investigation is to obtain scientific and technical data and has nothing to do with 'war crimes.'"

The final report of American scientists was submitted by Dr. Edwin V. Hill, technical director, and Dr. Joseph Victor, pathologist, in December 1947. Ishii's team provided Americans with a detailed report on Unit 731's experiments, including a list of 8000 pathological sections and hundreds of color drawings. [17]

Hill and Victor summarized the Japanese data by adding, "this information cannot be obtained in our own laboratory because we have scruples about human experiments... It is hoped that individuals who voluntarily provide this information will not be embarrassed, and

everyone will try to prevent this information from fall-ing into the hands of others." The scientists behind the report seemed to be concerned that, after conducting immoral and criminal experiments, Unit 731's scientists would be embarrassed by their disclosure. To save Jap-anese scientists, who were slow to cooperate with the US investigators, from embarrassment, seems to be a more important ethical priority for the American inves-tigation team than holding war criminals accountable.

According to records, the Japanese team's most important goal is first to protect their record, and secondly to prevent them from "falling into other [i.e. Com-munist] hands." Hill and Victor further put forward the argument based on cost-effectiveness. They calculated that the United States has so far spent about 250000 yen on the investigation of Japan's biological warfare. In contrast, Ishii's research cost "millions of dollars and years of work" (without mentioning the human cost of life and suffering). In short, the United States pays a "negligible" proportion of the cost of generating these data. This is another argument to pay respect to the work of the Japanese team so they would not be "embar-rassed."

Although speculative, it is easy to interpret a further conclusion in these statements, that is, the Americans compared their slow progress and commitment in the Detrick battalion with the obvious achievements and higher level of commitment of Unit 731 and justified the Japanese lack of "scruples." This confirms the conjecture that Americans post war investigators lowered their moral bars in order to get more information from the Japanese.[18]

A paper by Watts in 2002 recorded "some of the worst atrocities ever committed in the name of medi-cine." According to Watts, the veterans of Unit 731 have confessed their criminal experiments, but they were not sure how the judge will assess the evidence they provided. [19] Another study in 2017 [20] conclud-ed that the US should also do more repair because of its handling of Unit 731 at the end of the war. Evidence showed that, due to American's interest in the data from these Unit 731 experiments, the perpetrators were not prosecuted. Victims 731, unlike any other war crime, did not see the atrocities publicly condemned and the criminals held accountable.

The US-led investigation went nowhere, and the Japanese government continued to deny Unit 731's crime and hide its past. In fact, General Ishii was never tried at war crimes tribunal and died "a wealthy and respected doctor after the war." [21]

4. CONCLUSION

The officers and staff of Unit 731 have done all kinds of inhuman experiments, especially biological and chemical research projects that could be used to kill enemies and heal their own people. Like the Auschwitz

concentration camp in Poland and the atomic bombing site in Hiroshima, Japan, the site of the Japanese Unit 731 reveals the profound loss brought by war to humanity, which is of great historical value and significance. The crimes of Unit 731 were only parts of Japanese war crimes during the Japanese invasion in China. Many witnesses testified that Unit 731 in Nanjing and Unit 1855 in Beijing also carried out atrocious human experiments. [22]

After COVID-19, there is an increase concern about biological warfare using viruses. There is also a debate on how the history of biological warfare including the detailed reports of Unit 731 could benefit society and prevent biological weapons. It is doubtful how viruses could be turned into weapons against enemies without affecting those who initiate the biological weapon projects. As can be seen from the 1918 Influenza outbreak to the COVID-19 pandemic, infectious diseases affect all societies on earth. However, sharing the reports and information of Unit 731 with the global medical community will enable everyone to gain more insight to prevent such an atrocious crime from happening again. There is some evidence that the United States has some data about 731, obtained through secret negotiations at the end of the Pacific War. Sharing 731 data with the medical community would have made contributions to curbing the next potential crisis of biological warfare.

At that time, the US government needed data on biological weapons for its research and purposes. Therefore, they agreed not to prosecute the perpetrators of Unit 731 in exchange for at least some data. In other words, even then scientists understood the importance of data from Unit 731 research projects in enriching our understanding of infectious diseases and biological weapons.

It was wrong for the US to provide Unit 731 immunity from prosecution in exchange for data. While German war criminals and doctors were prosecuted and punished after the war, the Japanese doctors remained unharmed. This resulted in the fact that war crimes in the name of scientific experiments were to this day relative undiscussed. People are unalarmed by the threat of another biological war [23]. It is high time that the records of the Unit 731 become public and transparent to all. The Japanese government as well as the American investigators must acknowledge the past before we can reach a consensus on banning any biological warfare disguised as scientific experiments.

REFERENCES

- [1] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [2] N. Kristof, "Unmasking Horror -- A Special Report.; Japan Confronting Gruesome War Atrocity." The New York Times, 17 Mar. 1995, www.nytimes.com/1995/03/17/world/unmasking-horror-a-special-report-japan-confronting-gruesome-war-atrocity.html.
- [3] N. Kristof, "Unmasking Horror -- A Special Report.; Japan Confronting Gruesome War Atrocity." The New York Times, 17 Mar. 1995, www.nytimes.com/1995/03/17/world/unmasking-horror-a-special-report-japan-confronting-gruesome-war-atrocity.html.
- [4] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [5] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [6] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [7] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [8] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [9] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [10] J. Watts, The Lancet; "Victims of Japan's Notorious Unit 731 Sue," London Vol. 360, Iss. 9333, (Aug 24, 2002): 628.
- [11] N. Kristof, "Unmasking Horror -- A Special Report.; Japan Confronting Gruesome War Atrocity." The New York Times, 17 Mar. 1995, www.nytimes.com/1995/03/17/world/unmasking-horror-a-special-report-japan-confronting-gruesome-war-atrocity.html
- [12] R. Stockton, "Six Horrifying Human 'Experiments' That WWII Japan Got Away With." All That's Interesting, 5 Nov. 2018, allthatsinteresting.com/unit-731/2
- [13] N. Kristof, "Unmasking Horror -- A Special Report.; Japan Confronting Gruesome War Atrocity." The New York Times, 17 Mar. 1995,

- www.nytimes.com/1995/03/17/world/unmasking-horror-a-special-report-japan-confronting-gruesome-war-atrocity.html.
- [14] N. Kristof, "Unmasking Horror -- A Special Report.; Japan Confronting Gruesome War Atrocity." *The New York Times*, 17 Mar. 1995, www.nytimes.com/1995/03/17/world/unmasking-horror-a-special-report-japan-confronting-gruesome-war-atrocity.html.
- [15] N. Kristof, "Unmasking Horror -- A Special Report.; Japan Confronting Gruesome War Atrocity." *The New York Times*, 17 Mar. 1995, www.nytimes.com/1995/03/17/world/unmasking-horror-a-special-report-japan-confronting-gruesome-war-atrocity.html.
- [16] N. Kristof, "Unmasking Horror -- A Special Report.; Japan Confronting Gruesome War Atrocity." *The New York Times*, 17 Mar. 1995, www.nytimes.com/1995/03/17/world/unmasking-horror-a-special-report-japan-confronting-gruesome-war-atrocity.html.
- [17] P. Williams, D. Wallace, *Unit 731: Japan's Secret Biological Warfare in World War II*. New York: Free Press, 1989.
- [18] P. Williams, D. Wallace, *Unit 731: Japan's Secret Biological Warfare in World War II*. New York: Free Press, 1989.
- [19] J. Watts, *The Lancet*; "Victims of Japan's Notorious Unit 731 Sue," London Vol. 360, Iss. 9333, (Aug 24, 2002): 628.
- [20] D. Hickey, S.S. Li, C. Morrison, et al. *J Med Ethics* 2017; 43:270-276. DOI:10.1136/medethics-2015-103177"
- [21] D. Hickey, S.S. Li, C. Morrison, et al. *J Med Ethics* 2017; 43:270-276. DOI:10.1136/medethics-2015-103177"
- [22] R. Working, "The Trial of Unit 731," *The Japan Times*, June 5, 2001, <https://www.japantimes.co.jp/opinion/2001/06/05/commentary/world-commentary/the-trial-of-unit-731/>
- [23] D. Hickey, S.S. Li, C. Morrison, et al. "Unit 731 and Moral Repair." *J Med Ethics* 2017; 43:270-276. DOI:10.1136/medethics-2015-103177"