Book Review: How a Wartime Disaster Led to a Cancer Breakthrough

In “The Great Secret,” Jennet Conant shows how a World War II tragedy would eventually help in the war against cancer.

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Before the atomic bomb came along, chemical weapons were the ultimate red line — the boundary between supposedly civilized warfare and unrestrained barbarism. Even before their horrors were first unleashed on a large scale in World War I, nations had sought to ban the use of “poison weapons.” After approximately 90,000 were killed by gas warfare during World War I, the moral and legal revulsion intensified. Numerous solemn proclamations and protocols were created in which civilized nations pledged never again to use such ghastly weapons.

But such noble attitudes didn’t stop the major powers from continuing to research chemical weapons or build up their own stockpiles, including the United States, where the Chemical Warfare Service (CWS) became a permanent part of the Army in 1920. Ostensibly, of course, such efforts were undertaken to ensure that potential enemies would be dissuaded from attacking with chemical weapons, in an early form of deterrence theory that would later drive the superpower Cold War.

In December 1943, that brand of deterrence triggered a tragedy that would result in hundreds of Allied casualties and a massive cover-up orchestrated by none other than Winston Churchill and General Dwight Eisenhower. Jennet Conant’s new book, “The Great Secret: The Classified World War II Disaster That Launched the War on Cancer,” explores the unexpected link between that great secret and another one, namely a cure for cancer — a link that would lead to breakthrough therapies that would save thousands of lives because of the scientific acumen and dedication of two extraordinary physicians.

At the end of November 1943, merchant vessels arrived in the Allied-controlled port of Bari, Italy, carrying vital cargo, including tons of ammunition, fuel, medical supplies, and military vehicles. But one vessel, the American Liberty ship John Harvey, was carrying 540 tons of M47A2 mustard gas bombs, being transported under strict secrecy. In response to disturbing intelligence reports that the Nazis might use chemical weapons to dislodge Allied troops from the Continent, the U.S. and Britain had decided to surreptitiously build up their chemical weapons stockpiles near the front, where they would be readily on hand if needed for retaliation.

Just after 7:30 PM on Dec. 2, more than a hundred Luftwaffe bombers attacked Bari Harbor, sinking 17 ships while causing catastrophic damage to port facilities and inflicting massive casualties in what the papers were soon calling “a little Pearl Harbor.”

When many of the victims overflowing the hospitals began displaying mysterious symptoms and dying in unexpected numbers, Allied Force Headquarters at Algiers dispatched Lt. Col. Stewart Alexander, a 29-year-old doctor with the Chemical Warfare Service, to investigate suspicions that the Nazis may have begun upping the stakes with some new chemical weapon. A top expert who had been researching chemical weapons and possible treatments for their victims, Alexander soon found that the deaths were indeed caused by a chemical weapon, specifically mustard gas — but American in origin, leaking from the bombs in the hold of the John Harvey now scattered all over the bottom of Bari Harbor.

Alexander also recognized that the symptoms he was seeing in Bari were more severe and deadly than usual with mustard gas, particularly an inexplicable sharp drop in white blood cell counts. Before the war, he had been involved in researching the therapeutic prospects of some chemical-weapon substances, including mustard. He had found that white blood cells practically disappeared in rabbits exposed to mustard agents, while lymph nodes “just melted away.” The Bari victims showed exactly the same effects, which hadn’t been seen with such severity in World War I because those victims mostly succumbed to inhalation of caustic vapors, while the Bari cases had largely absorbed mustard in prolonged doses through the skin after being immersed in contaminated harbor water. Alexander “immediately saw the connection to cancer, a disease characterized by abnormal, unrestrained cell growth.”

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“Cruel fortune had handed him a morgue full of case studies,” Conant writes, “a rare opportunity to perform a pioneering investigation into mustard’s previously unknown biological effects on the human body.” He set about analyzing the possible reasons for the unprecedented white blood cell counts and other toxic effects seen at Bari, keeping meticulous records and collecting blood and tissue samples even as he tried his best to help the victims.

Not everyone was happy with Alexander’s investigations, however, least among them Churchill. “Alexander was informed that the prime minister had sent a terse reply to the effect that ‘your man in the field must have made a mistake,’ and that he did not believe there was mustard gas in Bari,” Conant notes. The prime minister knew otherwise, of course, but feared that any acknowledgement of the presence of poison gas in Italy would give the Nazis an excuse to use it on England, a position that Allied Supreme Commander Dwight Eisenhower duly supported. Alexander’s efforts to press his case went nowhere: “One does not argue with the prime minister,” he was told.

His final report was immediately classified, but attracted considerable admiration within the tight circle of those permitted to see it. One of these was Alexander’s boss, Dr. Cornelius P. “Dusty”

Rhoads, chief of the CWS Medical Division and one of the world's leading cancer researchers, who thought it a "classic medical paper." A sharp reduction in white blood cell counts along with bone marrow effects had been previously documented in some World War I mustard victims but not thoroughly investigated, mostly because intense public revulsion to chemical weapons after the war hampered research. But now, the Bari incident had provided extensive medical evidence too compelling to ignore.

Rhoads recognized that Alexander's systematic investigation "clearly pointed the way to a chemical that could possibly be used as a weapon in the fight against cancer," Conant writes. He was "enthralled" by the possibility that specific mustard compounds "might be harnessed to target rapidly growing cells that run wild in the body and then invade healthy tissue."

"Alexander had succeeded in extracting invaluable data from the morass of human suffering and official secrecy," she writes. "The inquisitive young physician had been the right man, in the right place, at the right moment in history, and Rhoads intended to ensure that Alexander's efforts did not go to waste."

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"The Great Secret" is at its heart a scientific detective saga starring Alexander in its first half and Rhoads in its second, as the raw material of Alexander's dogged scientific work is transformed into the effective (and sometimes not so effective) standard cancer treatment of chemotherapy. It's also a story heavy with moral complexity, not merely the obvious tensions involved in translating human suffering and a destructive technology into a life-saving blessing, but the ambiguous motivations and personalities of some of the players. Those include Rhoads's personal and professional falterings, and the questionable associations between Nazi Germany and General Motors, the corporation that funded Rhoads's pet project: the Sloan Kettering Institute for Cancer Research.

It's a complex tale with many parts, some historical, some scientific, and Conant, an experienced journalist and author whose previous books have delved into the intersections of science and World War II, tells it with a master's touch and great detail, perhaps too much detail for some readers who might not care for medical minutiae or clinical detail of horrific chemical weapons casualties.

Thanks partly to the lines of research opened up by Alexander's work at Bari, Rhoads was confident enough to tell reporters in mid-1950s that "we seem to be coming closer to the great secret." As we've learned in the decades since the Bari tragedy, rather than a single "great secret," cancer is a labyrinth of many secrets, some of them now revealed but many still in the dark.

And, as Conant writes, darkness persisted in other ways: "The secrecy surrounding chemical weapons in World War II continued long after the need for secrecy ended," so that many families of the Bari victims never knew what had killed their loved ones. Neither did many of the victims

themselves. Yet as “The Great Secret ” assures us, their deaths were not wholly in vain.

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