

A black and white photograph of a building entrance. The central focus is a large, ornate metal gate with a repeating geometric pattern. To the left is a plain wall with a small rectangular object. To the right is another wall with a window featuring a radial pattern. A patterned rug is visible in the lower right corner. The overall scene is dimly lit, creating a somber and mysterious atmosphere.

Accident at Compound 19: Unraveling a Cold War Medical Mystery

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Introduction

- In the spring of 1979, an outbreak of anthrax claimed dozens, possibly hundreds, of lives in the Soviet city of Sverdlovsk
- Upon discovering the incident, the US claimed it was a result of an accident at a biological warfare facility
- In response, the USSR stated that the outbreak came from consumption of tainted meat
- It would not be until the 1990s that the truth of what happened at Sverdlovsk would be established

Outline

- Context
- Controversy
- Conclusion
- Importance
- Postscript



Context

Sverdlovsk

- Founded in 1723 as Yekaterinburg
- App. 1,000 miles E. of Moscow in Ural Mtns.
- Renamed Sverdlovsk in 1924
- Original name restored in 1991



Sverdlovsk (cont.)

- Pop. just over 1,000,000
- Major industrial center ("Russia's Pittsburgh")
- Military-industrial center; no foreigners
- Site of the murder of Tsar Nicholas and his family in 1918
- 1960: Francis Gary Powers' U2 shootdown



Biological Warfare

- The use of disease as a weapon of war dates back centuries, though often exaggerated
- Modern, industrial, scientific BW programs began in the 20th Century, enabled by development of microbiology
- First use of modern BW by Imperial Germany during WWI
 - Directed at horses/mules
 - First organized state BW program
 - First wartime BW campaign

Biological Warfare (cont.)

- Japan's Unit 731 (1932-45)
 - Deadliest BW effort
- UK/Canada: 1940-57/58
- USA built an extensive BW program beginning in 1942
 - “world's most accomplished BW program during Cold War” (W. Seth Carus)
 - Increasingly controversial by late 1960s
 - Discontinued in 1969

Biological Warfare (cont.)

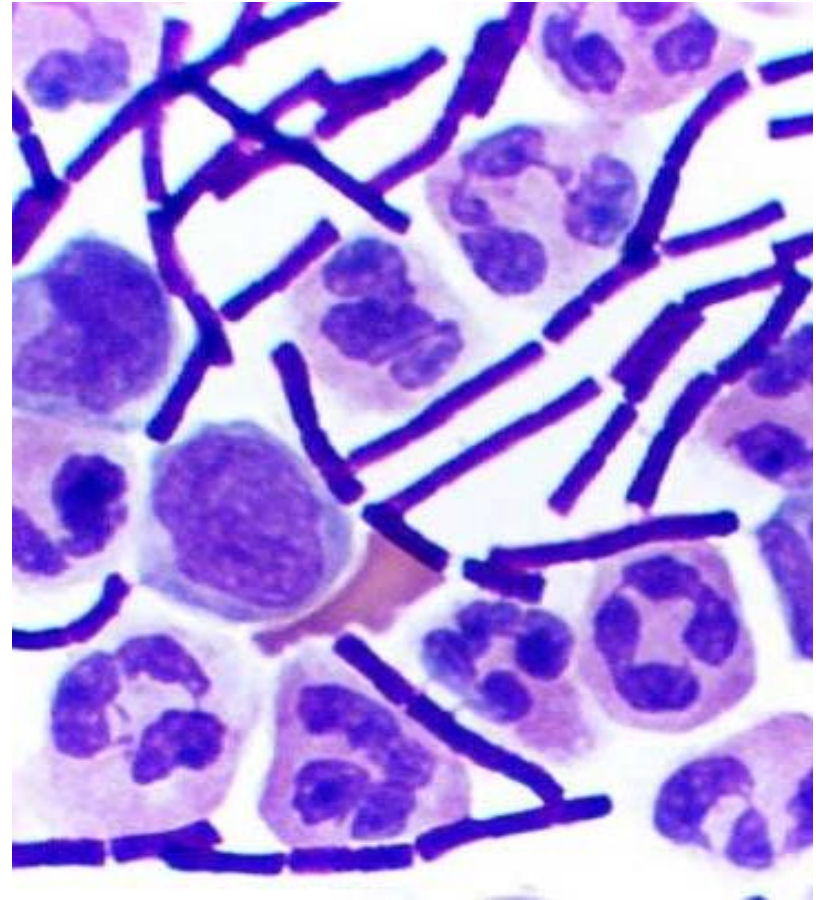
- Soviet Union began BW program in 1928
- Rivalled Japan's in 1930s
- Headed by L. Beria (1939-53)
- Run by the Soviet military
 - 7th Directorate of the General Staff (1953)
- Moribund by late 1960s

Biological Warfare (cont.)

- In 1972, the Biological & Toxin Weapons Convention (BWC) prohibited the production and storage of offensive BW
- Both USA and USSR signed
- BWC took effect in 1975

Anthrax

- *Bacillus anthracis*
- Naturally occurring bacterium found in soil
- Affects grazing animals (sheep, cows, horses)
- Consume or inhale spores
- Spores can survive up to 70 years in soil



Anthrax (cont.)

- Three forms of anthrax infection in humans
 - Cutaneous (skin)
 - Black lesions on skin
 - Gastrointestinal (consumed)
 - Inhalation (breathed)
 - Systemic
 - Produces toxin that overwhelms blood stream/lymph nodes
 - Toxic shock/ulceration/bleeding
- Zoonosis (from animals to humans)
- NOT contagious

Anthrax (cont.)

- Anthrax referenced in Homer and Virgil
- Major outbreaks in 14th and 17th centuries
- “Woolsorter’s” or “ragpicker’s disease”
- Known as “Siberian Ulcer” in Russia

Anthrax (cont.)

- 1752: first clinical description
- *B. anthracis* discovered in 1850-first human pathogen identified
- Understanding further developed by Koch and Pasteur
- Major component of most BW programs, esp. since WWII.



Controversy

The Sverdlovsk Controversy

- Reports of the Sverdlovsk anthrax outbreak reached the west in late 1979, continued into 1980:
 - Classified intelligence
 - Soviet émigré newspapers
 - Western media accounts
- March 1980: US raises issue with USSR regarding BWC compliance
- May 1980: Congressional resolutions/hearing
- Mid-1980: Interagency working group

The Sverdlovsk Controversy

- The US requested that the USSR explain Sverdlovsk outbreak on five occasions from March 1980-October 1981
- Raised the issue four times between October 1984-May 1989
- Soviets refused all requests, stating that Sverdlovsk not covered by BWC

Sverdlovsk: The US Version

- Outbreak occurred in April 1979/ended by June; 10kg released
- Chkalovskiy district (southern Sverdlovsk)
- Airborne (inhalation) anthrax, followed by gastrointestinal
- Caused by explosion at suspected BW facility (Compound 19)
- Extensive decontamination/public health response
- Death toll between 200-2,000
- Commander of Compound 19 committed suicide

The Sverdlovsk Controversy: The US Version

“in February I receive a letter through the underground sent to me from Moscow in January, in which a friend informed me that last spring an infectious strain had spread throughout Sverdlovsk, following an explosion in a secret bacteriological compound. My friend informed me that an infectious cloud had been driven by wind south from the city, and that no less than 1,000 people had died, both in the city and its suburbs. Residents within a very large radius of the military bacteriological compound were vaccinated twice. The vaccinations were painful and people refused to go to the clinics for vaccination. The nature of the disease was not known, but it was thought to be a very virulent form of anthrax. Those who came down with the disease died within a few hours after arriving at the hospital.”

-Congressional testimony of Mark Popovskiy, Kennan Institute, Wilson Center

Sverdlovsk Incident: Soviet Compliance with the Biological Weapons Convention? Subcommittee on Oversight, Select Committee on Intelligence. House of Representatives. May 29 1980, p.4.

The Sverdlovsk Controversy: The US Version

“Does the anthrax in Sverdlovsk demonstrate that the Soviets are producing or retaining a stockpile of anthrax in quantities excessive for peaceful use or for testing defensive measures against the possibility of biological warfare by other countries?”

-Congressman Les Aspin (D-WI), May 29, 1980.

Sverdlovsk Incident: Soviet Compliance with the Biological Weapons Convention? Subcommittee on Oversight, Select Committee on Intelligence. House of Representatives. May 29 1980, p.4.

Sverdlovsk: The Soviet Version

- Responded within a few days of US approach
- March 24 TASS article: “A Germ of Lying”
- Several articles in Soviet scientific journals and publications
- US charges dismissed as disinformation

Sverdlovsk: The Soviet Version

- Outbreak started among farm animals
- Infected animals slaughtered and meat sold in private markets in March-April 1979
- “Isolated cases of anthrax among humans”
- Both cutaneous and gastrointestinal

Sverdlovsk: The Soviet Version

“In the spring of 1979 a natural outbreak of anthrax among domestic animals did take place in the region of Sverdlovsk...Cases of skin and intestinal forms of anthrax were reported in people because dressing of animals was sometimes conducted without observing rules established by veterinary inspection.”

-TASS, June 12, 1980. Quoted in James E. Oberg, *Uncovering Soviet Disasters*, 1988, p. 14.

The Sverdlovsk Controversy

- Many western scientists accepted the Soviet explanation/skeptical of US version (M. Meselson)
- Urals/western Siberia had a history of anthrax outbreaks
- Dr. Donald Ellis present in Sverdlovsk; saw nothing unusual
- Extended nature of outbreak; not one-off event
- No formal complaint at UNSC

Source: <http://archives.news.yale.edu/v30.n7/story7.html>



The Sverdlovsk Controversy

- Beginning in 1986, the Soviets expanded on their account of events
 - Outbreak began with contaminated cattle feed fed to animals
 - Infected animals then killed and sold by private vendors
 - April 4-19 height of epidemic
 - Further cases through May 19
 - 79 gastrointestinal victims: 64 died
 - 17 cutaneous victims
 - Almost all adults; majority men

The Sverdlovsk Controversy



- 1988: 3 Soviet scientists visit US/share expanded Sverdlovsk account
- Led by Pyotr Burgasov
- Retired deputy minister of health
- Led Sverdlovsk response
- Account positively received by most American scientists
- US government still skeptical

The Sverdlovsk Controversy

‘Sverdlovsk’s "mystery epidemic" of 1979 lost much of its mystery this month when a group of Soviet doctors came to the United States and met with scientists and reporters to give a firsthand account of what happened.’

-Eliot Marshall, *Science* 240 (4851),
April 22, 1988, p. 383.



Conclusion

End of the USSR 1990-91



Source: <https://www.britannica.com/event/the-collapse-of-the-Soviet-Union>

End of the USSR, and the Sverdlovsk Coverup, 1990-91

- Beginning in 1990, several Soviet newspaper articles questioned the official account and argued that the outbreak was the result of a BW accident at Compound 19
- August 1990: Natalya Zhenova expose in *Liturnaturnaya Gazeta* sparked calls for a new investigation of Sverdlovsk outbreak
- Nov.-Dec. 1991: *Izvestiya* articles describe BW accident at Compound 19

The Role of Yeltsin

- Sverdlovsk CPSU boss at time of outbreak
- Lied to by KGB
- February 1992: Yeltsin admits to G.H.W. Bush that Sverdlovsk outbreak was result of a BW accident
- Publicly admits Soviet guilt in May 1992
- Promised pensions to victim's families
- Committed Russia to abide by BWC

The Meselson Investigation

- At Russian invitation, Dr. Matthew Meselson and a small team of western scientists visited Yekaterinburg to determine cause of outbreak
- Two visits:
 - June 1992
 - August 1993

The Meselson Investigation (cont.)

- Interviewed witnesses-confirmed accounts of official response
- Unearthed new autopsy records
- Tracked victims by location
- Published findings in *Science* (11/18/94)

The Meselson Investigation: Findings

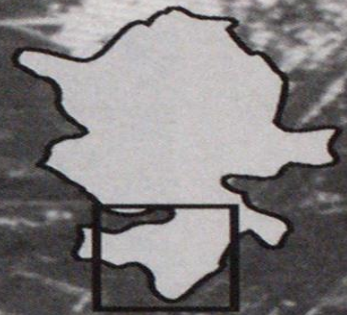
- 77 patients; 66 died
- 55 were men
- 57 of 66 lived/worked in Chkalovskiy
- 6 villages with animal anthrax

Sverdlovsk: April 2, 1979



Source: J. Guillemin, *Anthrax: The Investigation of a Deadly Outbreak*, Berkeley: 2001.

Sverdlovsk: April 2, 1979



1 km

Source: J. Guillemin, *Anthrax: The Investigation of a Deadly Outbreak*, Berkeley: 2001.

Meselson Investigation: Conclusion

“We conclude that the outbreak resulted from the windborne spread of an aerosol of anthrax pathogen, that the source was at the military microbiology facility, and that the escape of pathogen occurred during the day on Monday, 2 April. The epidemic is the largest documented outbreak of human inhalation anthrax.”

-Matthew Meselson, et.al, *Science* 266 (5188),
November 18, 1994, p. 1206.

Sverdlovsk Outbreak: What We Know

- April 1, 1979: Filters at Compound 19 anthrax production facility removed-production restarted before two were replaced
- April 2: Between 1 gram-10 kg of Anthrax spores released between 1:30 PM-4:00 PM
- April 4: first cases appear
- April 7-8: Moscow alerted
- April 10: First anthrax diagnosis
- April 12: Moscow authorities take charge, led by Burgasov
- Mid-April: Public health campaign begins
- Last death in mid-May
- At least 68 deaths, possibly 105

Sverdlovsk Outbreak: The Coverup

- KGB confiscated all medical records
- Committee led by Burgasov formulated official Soviet line
- Burgasov part of Soviet BW program since 1950
- December 1990: USSR Council of Ministers orders destruction of all documents related to Sverdlovsk outbreak
- Minimal internal investigation; no one held to account

Compound 19: What We Know

- Sverdlovsk Military Technical Scientific Research Institute
- Created in 1949
- Integral part of Soviet BW program
- Worked on anthrax and botulinum in 1950s and 60s
- Major Soviet anthrax production facility in 1970s
- Led by General V. V. Mikhailov in 1979
- Production ceased after accident



Importance

Why Sverdlovsk Matters

- 1. Worst inhalation anthrax outbreak ever recorded
- 2. Indicative of the Soviet culture of secrecy, deception, and lack of accountability concerning scientific accidents and public health threats
- 3. “Tip of the iceberg” of the Soviet BW program

Soviet Scientific Disasters: The Crime and the Lie

- Sverdlovsk was one in a long series of Soviet scientific disasters treated as a state secret
 - 1957 Kyshtym nuclear disaster (1989)
 - 1960: Rocket explosion
 - 1971: Smallpox outbreak
 - April 26, 1986: Chernobyl
- Practice continues in Russia today

The Soviet BW Program

- In the early 1970s, just as the USSR committed itself to relinquish all offensive BW capability under the terms of the BWC, it would instead embark on building the largest, most extensive, BW program in history

The Soviet BW Program (cont.)

- 2nd generation BW program, designed to exploit genetic engineering
- Military and civilian wings
 - 15th Directorate of the Gen. Staff
 - Biopreparat

The Soviet BW Program (cont.)

- Biopreparat employed 40,000-60,000 workers at five major facilities (plus 40 others)
- 15th Directorate another 10,000, with three major facilities
- Testing facility at Aralsk-7 (Vozrozhdeniye Island)
- Weaponized anthrax, smallpox, pneumonic plague, tularemia, Marburg virus



Postscript

Putin's Russia and the Sverdlovsk Outbreak

- Under Vladimir Putin, Russia has denied the USSR ever had an offensive BW program
- Reverted to the “infected meat” explanation of Sverdlovsk
- New explanation: CIA sabotage
- Russia has still not fulfilled its obligations under the BWC

Putin's Russia and the Sverdlovsk Outbreak (cont.)

- In February 2012, Putin spoke about developing “weapon systems based on new principles”, including “genetic”
- Russia in recent years has invested heavily in several legacy MOD biological research facilities
- Including Yekaterinburg Center for Military Technical Problems of Anti-Bacteriological Defense (aka: Compound 19)

Questions?

- Slides and bibliography at CWIS Blog:
<http://blog.ecu.edu/sites/cwis/>
- Laupus MHIG site:
<https://hsl.ecu.edu/events/mhig-lectures/>



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