

# Salem Witch Trials: The Fungus Theory *Witch or Psychedelic Trip?*

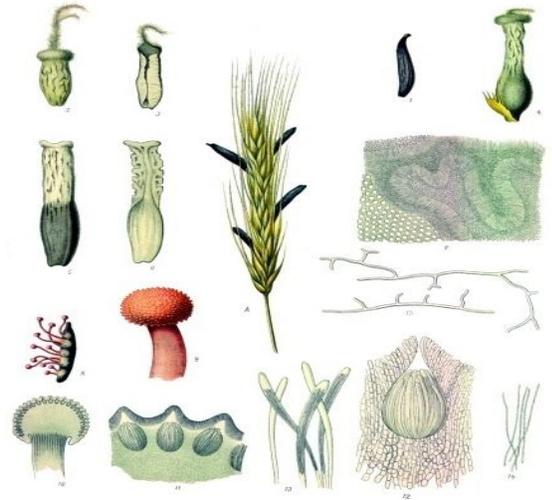
L. Caporael (1976)



During the winter of 1692 eight girls came down with a mysterious and terrifying illness in the colonial town of Salem, Massachusetts. They vomited, screamed incomprehensibly, claimed to see things that weren't there, felt the crawling and pricking of invisible needles against their skin, and convulsed and contorted into impossible positions. Physicians were called to examine the girls, but they couldn't find any medical cause for the alarming symptoms. Neighbors began to suspect that the girls were bewitched. As unease spread the girls began to accuse other townspeople of witchcraft, identifying them as their tormenters. What followed were the Salem Witch Trials and a period of paranoia and violence. When the trials abruptly ended several months' later twenty men and women had been executed for the crime of witchcraft. The Witch Trials have become engrained in the American psyche as a near-mythical cautionary tale about the dangers of panic and hasty reaction. But what really happened in Salem nearly 400 years ago?

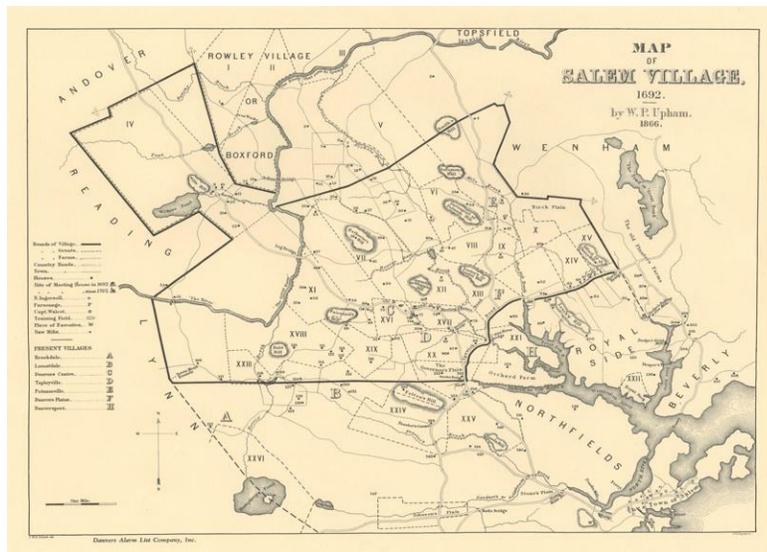
Were the eight girls who sparked the Witch Trials faking illness? Their symptoms sound pretty outlandish so it's easy to dismiss them as made-up. But given the severity of the symptoms and the gravity of the resulting situation it seems unlikely that all eight girls were lying. Another possibility is that the girls may have actually been sick. Just because the 17th century physicians in Salem couldn't identify a medical cause for the illness doesn't mean one didn't exist (if I were sick I probably wouldn't trust a 17th century physician). First proposed by Linda Caporael in 1976, one of the most interesting explanations for the described symptoms involves unintentional ergot poisoning, or ergotism.

Ergot is a fungus that grows on grain, especially rye. It was commonly found in European and American rye through the 19th century. Ergot is interesting because it is a particularly prolific fungus – it produces an impressive variety of neurotoxins and hallucinogens that remain in bread products made from infected grain even after the grain has been processed. The psychedelic hallucinogen LSD was first made using an extract that was isolated from ergot. But when eaten, the cocktail of poisonous neurotoxins and hallucinogens found in ergot-infected grain makes for a pretty bad trip – ergot poisoning leads to convulsive fits, vomiting, prickling sensations under the skin, and hallucinations.



*Illustration of the anatomy and life stages of ergot*

These symptoms sound suspiciously similar to the illness experienced by the Salem girls. And in fact, other townspeople testified under oath that they had seen apparitions and lights that others who were present could not see. Some also reported being pushed or feeling their skin being pricked when no one else was present. Assuming these experiences were real, ergot poisoning provides a plausible explanation.



*A map of Salem in 1692*

But could grain in Salem have been contaminated with ergot? Rye, which grows best in low, wet areas and is susceptible to ergot infection was a staple crop in Salem. Accounts from the time indicate that 1691 was an unusually wet year. Since ergot prefers wet conditions, this weather pattern could have set the stage for a rye crop that was heavily infected with the fungus. On top of this, farmland in the western section of Salem consisted primarily of swampy fields, so an ergot infection would have likely been concentrated in this area. So if ergot poisoning was a factor in the bewitching of the accusers in Salem, you would expect most of them to have lived in the western section of town. As it turns out 30 of 32 accusers (excluding the girls) lived on the western side of town while 12 of 14 accused witches lived on the eastern side of town. Since stored grain is eaten throughout the winter, the effects of ergot poisoning on the population would have been cumulative, and in the Spring the witchcraft trials ended abruptly.

In terms of the number of individuals who were executed, the Salem Witch Trials were an anomaly, but they were not unprecedented. Witchcraft was actually a legal offense in the Colonies and witchcraft panics followed by trials and executions periodically played out in Europe. Since Caporael first suggested that ergotism may have sparked the Salem Witch Trials, other historians have investigated the possible role of ergotism in other witchcraft panics in Europe. As in Salem, descriptions of supposedly bewitched individuals during many European witchcraft panics match the symptoms of ergotism, and weather conditions favoring ergot infection often existed before panics. While it's impossible to prove that an epidemic of ergot poisoning was a factor in the Salem Witch Trials, there is circumstantial evidence that suggests it may have played a role. But even if this was the case, the town's reaction to a medical crisis was largely shaped by a complicated mixture of cultural, religious, social, and even economic factors.

**Write a functional definition for "ergotism" and explain, using textual evidence from the article, why it is a viable explanation for the hysteria in Salem.**