

Mystery of infamous 'New England Dark Day' solved by 3 rings

June 7 2008

At noon, it was black as night. It was May 19, 1780 and some people in New England thought judgment day was at hand. Accounts of that day, which became known as 'New England's Dark Day,' include mentions of midday meals by candlelight, night birds coming out to sing, flowers folding their petals, and strange behavior from animals. The mystery of this day has been solved by researchers at the University of Missouri who say evidence from tree rings reveals massive wildfires as the likely cause, one of several theories proposed after the event, but dismissed as 'simple and absurd.'

"The patterns in tree rings tell a story," said Erin McMurry, research assistant in the MU College of Agriculture, Food and Natural Resources Tree Ring Laboratory. "We think of tree rings as ecological artifacts. We know how to date the rings and create a chronology, so we can tell when there has been a fire or a drought occurred and unlock the history the tree has been holding for years."

Limited ability for long-distance communication prevented colonists from knowing the cause of the darkness. It was dark in Maine and along the southern coast of New England with the greatest intensity occurring in northeast Massachusetts, southern New Hampshire and southwest Maine. In the midst of the Revolutionary War, Gen. George Washington noted the dark day in his diary while he was in New Jersey.

Nearly 230 years later, MU researchers combined written accounts and fire scar evidence to determine that the dark day was caused by massive

wildfires burning in Canada.

"A fire comes along and heat goes through the bark, killing the living tissue. A couple of years later, the bark falls off revealing the wood and an injury to the tree. When looking at the rings, you see charcoal formation on the outside and a resin formation on the top that creates a dark spot," said Richard Guyette, director of the Tree Ring Lab and research associate professor of forestry in the MU School of Natural Resources.

The researchers studied tree rings from the Algonquin Highlands of southern Ontario and many other locations. They found that a major fire had burned in 1780 affecting atmospheric conditions hundred of miles away. Large smoke columns were created and carried into the upper atmosphere.

"This study was a unique opportunity to take historical accounts and combine them with modern technology and the physical historical evidence from the tree rings and solve a mystery with science," McMurry said.

The study – "Fire Scars Reveal Source of New England's 1780 Dark Day" – was published in the International Journal of Wildland Fire.

Source: University of Missouri-Columbia

Citation: Mystery of infamous 'New England Dark Day' solved by 3 rings (2008, June 7) retrieved 25 April 2024 from <https://phys.org/news/2008-06-mystery-infamous-england-dark-day.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.