

A Sulphurous Stench: Illness and Death in Europe Following the Eruption of the Laki Fissure

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This poster suggests there may be a relationship between unusually large rates of human mortality and sickness in villages in England and a sustained period of air pollution caused by the concentration of volcanic gases emanating from the Laki fissure eruption in Iceland during AD 1783. Documentary evidence suggests there may have been significant human illness and morbidity in parishes in rural England in the late eighteenth century. Demographic data for a number of rural parishes in different environmental settings point to a singular peak in burials taking place in 1783. The Laki Fissure eruption of 1783-84 and the resultant atmospheric loading by gas and sub-PM10 aerosol, in particular H₂SO₄ generated massive, but entirely natural air pollution. In northwest Europe, the air pollution was manifested as a persistent, foul-smelling dry fog and various forms of acid-damage to crops, trees and water-bodies and a consistent range of human health problems. These link the presence of the dry fog with headaches, eye irritation, decreased lung function and asthma. The concept that intense anthropogenic air pollution may cause respiratory illness and/or the death of vulnerable sections of the population is familiar in modern western societies. There is no reason to suggest that volcanic air pollution may not have had a similar impact in the past. Mortality patterns from widely separated English rural parishes suggest that a crisis did occur during the summer of 1783 — awareness of physical process and the circumstantial evidence suggests acid volcanic gases may have been the key agent. Calculation of mortality indices from available demographic data does suggest that death rates did increase significantly at this time and mortality in the summer of 1783 is classified as a crisis. In raw numbers over 10 000 more people died at this time than would normally be expected — this is actually a 1000 more people than died in Iceland following the Laki fissure eruption. Given the stark nature of statements concerning the dry fog and death elsewhere in Europe we may securely anticipate further evidence of crisis mortality coincident with the Laki fissure eruption.