

Volcano Samalas mystery revealed

The international team of scientists with the participation of Krasnoyarsk dendrochronologists offered their answer to one of the mysteries of climatology and volcanology.



The reason for the scientific interest in the eruption of the volcano Samalas is that it is considered **the largest in the last thousand years throwing as much as 10 cubic miles of rock into the atmosphere**, which led to destroying Pamatan, the capital of the ancient Kingdom of Lombok. The ice cores in Greenland evidence this as the study of their chemical composition in the 1980s pointed out that there was one of the largest in history volcanic eruptions in the XIII century. The volcano itself has long remained unknown, and scientists have searched for it all over the world. After studying the writings on the palm leaves in Old Javanese, in 2003 Franck Lavigne found that this volcano could be Samalas located on the island of Lombok in Indonesia. Lake Segara Anak formed in the crater later and made it difficult to detect the volcano.

One of the existing scientific theories in climatology over the impact of the eruption Samalas volcano on global climatic conditions in the XIII century says that this event may be the cause of the abnormal cold weather (chronicles describe the following year as the "year without a summer"), widespread crop failure, famine, and social upheavals in Europe after 1257.

In January 2017 a paper under the title "Climate response to the Samalas volcanic eruption in 1257 revealed by proxy records" [was published](#) in the British scientific journal Nature geoscience with high impact factor among the nature journals (12.508 for 2 years). The international writing team includes scientists from Switzerland, Russia, France, Britain, the United States, China and Canada. Vladimir Myglan (School of the Humanities of Siberian Federal University) and Olga Churakova (Sidorova) (University of Bern, Institute of Geological Sciences, V.N. Sukachev Institute of Forest, SB RAS) are the Krasnoyarsk scientists who took part in the research. In the scientific world, the leading hypothesis is that the eruption of the volcano Samalas in 1257 was the cause of the Little Ice Age, and more than a hundred years of social crisis in Europe. **Based on the analysis of reliable sources the paper refutes this hypothesis.**

The international team of scientists base their studies on the chronicles of European cities (Speyer, Worms and others) and Siberia, chronicles of harvests and climate data of the annual rings of trees. During the interdisciplinary analysis of data sources, it was found that the impact of the volcanic eruption Samalas on the European climate and the severe cooling after 1257 is greatly exaggerated as the heterogeneity of climate change occurs in the places of distribution of volcanic sediments.

Vladimir Myglan: *"Western Europe, Siberia and Japan experienced the strongest cooling, which coincided with warmer than normal conditions in Alaska and Northern Canada. It is assumed that in North America volcanic radiation was modeled on the positive vibrations of the warm phase of the El Niño. Historical data confirm a severe famine in England and Japan, but it had started before the eruption. We believe that the eruption of the volcano Samalas only aggravated an existing crisis but it was not the cause".*



Alexandra Sitnikova, 20 february 2017

© Siberian federal university. Website editorial staff: +7 (391) 246-98-60, info@sfu-kras.ru.

Web page address: <https://news.sfu-kras.ru/node/18378>