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A Note on Volcanism and the Book of Mormon

The account of the great destruction at the death of Christ in Third Nephi relates that many cities at the time were destroyed by fire (3 Nephi 8:14; 9:3, 9–11). In an article published in 1998, geologist Bart Kowallis argued that the destructive events, including the burning of cities described there, are consistent with the effects of a significant volcanic event.¹ The volcanic interpretation fits particularly well in a Mesoamerican setting where volcanic events are historically common.² Additional support for this interpretation can be found in Mormon's description of the aftermath of these events. In his abridgement of the subsequent history of the people of Lehi, Mormon states that it was many years before these burned cities were rebuilt and inhabited (4 Nephi 1:6–7).

One of the devastating effects of a volcanic eruption is the long-term impact it can have upon the agriculture of a community. A populated community such as a village, town, or city must be able to provide food and water and other resources for itself in order to be viable. In addition to the ash fall, which would destroy crops during the eruption itself, “many gases produced by cooling ash (sulfur dioxide, hydrochloric acid, hydrofluoric acid, carbonic acid and ammonia) are detrimental to plant growth.”³ In significant eruptions this can have a debilitating effect that lasts for decades. In a pre-industrial economy, this would discourage future settlement until a stable agriculture was again sustainable. The year 1902 saw the eruption of the West Indies volcano Soufrière St. Vincent. A geologist who returned to study the site in 1933 found that soil from the volcano, which had been ash at the time of the eruption, had undergone sufficient changes in about 30 years to return to a level comparable to that before the eruption. Based upon this and other examples, another scientist concludes that “in tropical climates a soil can be created from volcanic ash which is sufficient to support agriculture or climax vegetation in 30–40 years.”⁴

In light of these studies, Mormon's account may be significant. He states that after 59 years had passed away from the birth of Christ, “the Lord did prosper them exceedingly in the land; yea, inasmuch that they did build cities again where there

had been cities burned. . . . And it came to pass that the seventy and first year passed away” (4 Nephi 1:7, 14). Notably, the events described occurred between the end of the 59th year and the end of the 71st year (that is, between 25 and 37 years after the destruction at the death of Christ). This would make sense in light of a volcanic event, since by that time, as shown above, the soil of the affected area would be able to sustain an agriculture required to feed those who lived there. ♦

By Matt Roper

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Notes

1. Bart J. Kowallis, “In the Thirty and Fourth Year: A Geologist's View of the Great Destruction in 3 Nephi,” *BYU Studies* 37/3 (1997–98): 136–90.
2. John L. Sorenson, “When Day Turned to Night,” *Journal of Book of Mormon Studies* 10/2 (2001): 66–67.
3. James E. Chase, “The Sky Is Falling: The San Martín Tuxtla Volcanic Eruption and Its Effects on the Olmec at Tres Zapotes, Veracruz,” *Vínculos* 7/1–2 (1981): 64.
4. Chase, “Sky Is Falling,” 64–65.

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