Abstract: This series argues that the changing attitudes of biblical scholars toward basic questions about scripture allow room for claims made by the Book of Mormon. It discusses external evidences, the primitive church, Lehi, Zenos, the olive tree, and the Dead Sea Scrolls. The twenty-sixth part discusses the earthquake recorded in 3 Nephi in the context of other natural disasters.
The author makes a fascinating comparison of the great earthquake recorded in 3 Nephi with other well-known earthquakes and reaches a significant conclusion.

- *The Great Earthquake*. Since Cumorah the earth has done a great deal of quaking, and seismology has become a science. Today it is possible to check step-by-step every phenomenon described in the account of the great destructions reported in 3 Nephi 8-9 and to discover that what passed for many years as the most lurid, extravagant, and hence impossible part of the Book of Mormon is actually a very sober and factual account of a first-class earthquake. It was a terror—about XI on the Wood-Neuman scale—but at that it is probably not the worst quake on record, since we are expressly told that the damage was not total—"And there were some cities which remained: ..." (3 Ne. 8:15)—whereas in the great Assam earthquake of 1950 the damage was total over a large area.66 Take the Book of Mormon events in order:

First "there arose a great storm ... and ... also a great and terrible tempest," from which it would appear that the storm developed into a hurricane. (3 Ne. 8:5-6.) Major earthquakes are so often accompanied by "heavy rains, thunder and hailstorms, violent tempests," etc., that some specialists insist that "there is some indication that certain weather conditions may 'trigger' an earthquake,"67 as in the Japanese earthquake of 1923, of which some
Japanese seismologists maintain that "the low barometric pressure was the trigger which set off the earthquake." At any rate, great earthquakes are preceded by great storms often enough to cause speculation.

Next there was a lot of noise, "terrible thunder, insomuch that it did shake the whole earth as if it was about to divide asunder." (3 Ne. 8:6.) Note that the thunder was thought to cause the shaking, obviously preceding it. This is another strange thing about earthquakes: "In accounts of earthquakes we always hear of the frightful noise which they produce. . . . But in addition, it seems that sometimes the earthquake can be heard before it is felt," which is "difficult to explain. . . . one should feel the shock before hearing it." The thunder seems to shake the earth, since "the sound always appears to come from the ground beneath the observer." In the Assam earthquake of 1950 "one thing is stressed in all the reports: the awful rumble that heralded the outbreak of the earthquake . . . a deafening roar, louder than anything any of the witnesses had ever heard before." The Book of Mormon aptly describes the continuous sounds as "the dreadful groanings . . . and . . . tumultuous noises." (3 Ne. 10:9.)

"And there were exceeding sharp lightnings. . . ." (8:7.) According to an eyewitness account, the great earthquake that completely destroyed the old capital of Guatemala on September 11, 1541, was preceded by "the fury of the wind, the incessant, appalling lightning and dreadful thunder" that were "indescribable" in their violence. One of the still unexplained phenomena of earthquakes is that "all types of lights are reported seen. . . . there are flashes, balls of fire, and streamers." The terrible wind at Guatemala City is matched in the Book of Mormon by high winds with occasional whirlwinds that even carried some people away. (3 Ne. 8:12, 16; 10:13-14.) In the Japanese earthquake of 1923 the wind reached a velocity of 50 m.p.h., and "the fires, in turn, set up minor tornadoes"; and in the Assam earthquake "strong winds raised the dust until visibility was reduced to a few feet. . . ." By 1923 the city of Zarahemla did take fire. (3 Ne. 8:8.) It would appear from the account of the Nephite disaster that the main cause of destruction was fire in the cities (3 Ne. 9:8-11), which agrees with all the major statistics through the centuries; for "earthquakes are largely a city problem" mainly because the first heavy shock invariably sets fires all over town: in the Japanese experience "wind-driven flames were shown to be more dangerous than the greatest earthquake." (3 Ne. 9:7.) Such a submergence happened on a spectacular scale in the Chilean earthquake of 1960: "We would have taken these flooded stretches—permanently flooded—for coastal lagoons," a geologist reports, "if here and there we had not seen roads that ran straight towards them and into them . . . roads that vanished, or sometimes showed under the stagnant water, branching into what had been the streets of a town." In the New Madrid (Missouri) earthquake of 1811 two vast tracts of land were covered with fresh water both by the damming of streams and the bursting out of numerous earthquake blows or fountains, flooding the newly submerged areas.

"And the earth was carried up upon the city of Moronihah that in the place of the city there became a great mountain." (3 Ne. 8:10.) In September 1538 during a tremendous storm and tidal wave a volcanic mountain suddenly appeared and covered a town near Puzzuoli on the Bay of Naples; ever since the mountain has been known as Monte Nuovo, or New Mountain. The carrying up of the earth upon the city suggests the overwhelming of Pompeii by vast heaps of volcanic ash or the deep burial of Herculaneum under lava in 79 A.D. On the other hand, other cities were "sunk, and the inhabitants thereof . . . buried up in the depths of the earth." (3 Ne. 9:6.) This could have been an actual engulfment: in the great earthquake of 1755, which was felt all over Europe, "the quay at Lisbon sank, with all the people on it, into a . . ." (Continued on page 1028)
Since Cumorah
(Continued from page 975)

fissure, and no trace of quay or people was seen again.”

It was a fine new breakwater, and a sizeable number of the town’s inhabitants had fled to it to escape from the fire and falling houses of the city.

“... The quakings ... did last for about the space of three hours” (3 Ne. 8:19), though the aftershocks, correctly described as “the tremblings and groanings,” continued for three days (10:9), during which time the afflicted people carried on in hysterical fashion with frightful howling and lamentation. This too is a normal part of the picture, since “the incessant

FIFTY-TWO THOUSAND HOURS

RICHARD L. EVANS

We are told that by the time a child is twelve he will have spent approximately fifty-two thousand hours in his home, besides time for sleep. Even allowing a large margin of error, or wide variance from family to family, this is still a startling fact on the influence of environment, and an indication as to where the greatest responsibility lies—fifty-two thousand hours at home, by the time a child is twelve! This being so, or even if it were only partly so, home had better be what it ought to be. This being so, the influence of those who are or ought to be home could clearly be counted as foremost. And when we complain of outside influences, of what schools teach or fail to teach, of the social and moral atmosphere of the community, of the wholesome or unwholesome influences of others, any or all of which could be a cause of concern, still as parents we had better search ourselves and ask ourselves most earnestly what we are doing toward shaping the lives, the attitudes, the character of our children in these fifty-two thousand hours, when the home is, or should be, the place of foremost influence by the time of twelve. This points the need for parents to be alert, to be available, to be present and prepared with wholesome common sense counsel and quiet consistency, with love and an example of honesty and honor. “A child learns more by imitation than in any other way,” said George Sanderlin. “Don’t we all? And the persons he imitates most blindly and trustingly are bound to be his parents. ... Nature has made the relationship between parent and child such that beside it any other training bears a certain artificiality.”

God has given parents first responsibility for their families, and drifting and taking a chance on the factors that shape their lives isn’t an acceptable fulfillment of this sacred assignment. There must be learning, teaching, living, loving, constancy of example, consistency of life, in the home and from the heart. As parents we must face the fact that of all the areas of influence, home is the most important place, and ours is the first, the longest, the most intimate and impressionable opportunity to teach our children—fifty-two thousand hours by the time they have turned twelve.


recurrence of aftershocks after a great earthquake is most unnerving to the populace. 82

"... there was thick darkness ... the inhabitants ... could feel the vapor of darkness; ... neither could there be fire kindled ... so great were the mists of darkness." (3 Ne. 8:20-22.) This, like much else in the account (e.g., that God "did send down fire and destroy them" [3 Ne. 9:11]), suggests nearby volcanic activity. And indeed, in many cases "earthquakes are the preparation for the volcano that follows," as in the Chilean 1960 quake, which triggered the activity of long-dormant volcanoes in the area. 83 Most of the victims of the great catastrophes of Pompeii, St. Pierre (Martinique, 1902), and Mt. Pelee (1906) died of suffocation when earthquake dust, volcanic ash, steam, and hot gasses (mostly sulforated hydrogen gas) took the place of air. In some areas, the Book of Mormon reports, people were "overpowered by the vapor of smoke and of darkness," and so lost their lives. (3 Ne. 10:13.) Even without volcanic accompaniments, however, major earthquakes kick up a terrible dust and, according to Sieberg, are accompanied by "phenomenal vapors and astonishingly thick air." 84 In the Assam earthquake such contamination "reduced visibility to a few feet and made breathing a nightmare." 85

The Book of Mormon also mentions the rising and sinking of the land, forming new "hills and valleys" (3 Ne. 9:5-8)—with no mention of major mountain ranges! In the New Madrid earthquake of 1811-2, "over an area of 30,000 square miles the land surface was lowered by amounts of 6 to 15 feet and over a much smaller area was raised by similar amounts." 86 Hydrographic surveys after the Japanese quake of 1923 showed that over an area of 500 square miles "some areas were lowered as much as 689 feet, adjacent areas

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In the Nephite catastrophe some cities escaped total destruction, since they did not lie at the center of the earthquake zone but were south of it. (3 Ne. 8:15, 12.) As is well known, “Central America lies in the heavy earthquake belt,” as well as being both a coastal and a volcanic area—a perfect setup for all the disasters which the Book of Mormon describes so succinctly and so well. That everything looked strangely changed after the debacle, with seams and cracks everywhere and “highways . . . broken up, and the level roads . . . spoiled, and many smooth places became rough” (3 Ne. 8:13, 17-18) needs no commentary, since such are the commonest of all earthquake phenomena. The remarkable thing about such statements is their moderation. Here was a chance for the author of the Book of Mormon to let his imagination run wild (as too many of his followers have done), with whole continents displaced, signs in the heavens, and monsters emerging from the deep. Instead, we get level roads spoiled and smooth places made rough!

We must bear in mind that what the Book of Mormon reports are the happenings as the people experienced them rather than as instruments would record them. Most earthquake data are of this very human nature, and exactly match the account in 3 Nephi. The Book of Mormon description emphasizes the fact that it was not any one particular thing but the combination of horrors that made the experience so terrible. As N. H. Heck puts it, what makes a major earthquake so devastating is “the combination of forces . . . into an almost irresistible source of disaster.” The picture of cumulating disaster at the destruction of Guatemala City in 1541 strikingly parallels the story in the eighth chapter of 3 Nephi: “It had rained incessantly and with great violence...
...the fury of the wind, the incessant, appalling lightning and dreadful thunder were indescribable. The general terror was increased by eruptions from the volcano...[the following morning] the vibrations of the earth were so violent that people were unable to stand; the shocks were accompanied by a terrible subterranean noise which spread universal dismay..."no

We have then in the Book of Mormon a factual and sober account of a major upheaval in which by comparison with other such accounts nothing seems exaggerated. However, wildly others may have chosen to interpret the Book of Mormon record, so far is it from bearing the marks of fantasy or wild imagination that it actually furnishes convincing evidence that the person who wrote it must have had personal experience of a major Meso-American quake or else have had access to authentic accounts of such.

(To be continued)

FOOTNOTES
12Eby, loc. cit.
14Knop, op. cit., pp. 114f.
16W. Knop, op. cit., p. 115; Knop, loc. cit.
17Ibid., p. 114.
19Tazieff, When the Earth Trembles (New York: Harcourt, Bract, 1964), p. 34.
20Heck, op. cit., p. 115; Knop, loc. cit.
21Spinden, op. cit., pp. 187-192, for cases of the earth being carried up over the land.
22Milne, op. cit., p. 29, giving other instances also.
23Byerly, op. cit., p. 78.
25Down to the present generation "old Indians still fix their ages and other events in relation to 'La Ocurrencia Grande'--The Great Darkness' that accompanied a great eruption and earthquake in Nicaragua in 1835; Spinden, op. cit., p. 211; Sieberg, op. cit., p. 153; "...aufliegender Nebel und wundersame dicke Lufte.
26Knop, op. cit., p. 25.
27Heck, op. cit., p. 17.
28Ibid., pp. 115f.
29Byerly, op. cit., p. 82.
30Spinden, op. cit., p. 115.
31Byerly, op. cit., p. 82.