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Book of Mormon Lands

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CHAPTER XI.

BOOK OF MORMON LANDS.^a

The location of many cities mentioned in the Book of Mormon, and the districts of Nephite lands that would correspond to departments and provinces in the political nomenclature of modern times, may not now be definitely fixed upon. This circumstance arises largely out of the fact that the Nephite historians have said nothing explicitly as to the extent of those mighty changes which were wrought in the form of Book of Mormon countries by the awful convulsions of nature at the time of Messiah's crucifixion. That the changes were considerable no one can question; for while certain allowances must always be made for language used in describing such events as then took place, the very definite statements of the Book of Mormon with reference to these events leave no room for doubt as to the great transformations wrought in the physical aspects of the land by those great cataclysms. Three different writers make mention of the physical changes wrought at Messiah's crucifixion, two prophetically, and one gives two descriptions of the physical

^aMy treatment of the subject here has simply to do with the physical character of the great divisions of the western hemisphere in Book of Mormon times. I make no attempt to definitely locate particular lands mentioned in the Book of Mormon, for the reason that the plan of my treatise does not require the consideration of that subject, except in a very general way; and however interesting it might be to know definitely the location of particular Jaredite and Nephite lands—the extent of their kingdoms, empires and republics; the location of special provinces and other political districts or divisions therein, together with a knowledge of the exact location of their capitals, and metropolises, I do not believe those things can be learned with any degree of certainty, for reasons set forth in the text of this chapter.

changes that took place through the convulsions of nature. I remark, in passing, that it must be remembered that the prophetic descriptions must be accounted as real as the historical descriptions; for as the prophets saw it, so indeed it came to pass. The first Nephi, in his description of the great cataclysms, says:

I saw a mist of darkness on the face of the land of promise; and I saw lightnings, and I heard thunderings, and earthquakes, and all manner of tumultuous noises; and I saw the earth and the rocks that they rent; and I saw the mountains tumbling into pieces; and I saw the plains of the earth, that they were broken up; and I saw many cities that they were sunk; and I saw many that they were burned with fire; and I saw many that did tumble to the earth, because of the quaking thereof.^b

The following is the prophet Samuel's description of the physical changes in the western hemisphere at the crucifixion of Christ:

Behold, in that day that he shall suffer death, the sun shall be darkened and refuse to give his light unto you; and also the moon, and the stars; and there shall be no light upon the face of the land even from the time that he shall suffer death, for the space of three days, to the time that he shall rise again from the dead; yea, at the time that he shall yield up the ghost, there shall be thunderings and lightnings, for the space of many hours, and the earth shall shake and tremble, and the rocks which are upon the face of this earth; which are both above the earth [surface] and beneath, which ye know at this time are solid, or the more part of it is one solid mass, shall be broken up; yea, they shall be rent in twain, and shall ever after be found in seams and cracks, and in broken fragments upon the face of the whole earth yea, both above the earth and beneath. And behold there shall be great tempests and there shall be many mountains laid low, like unto a valley, and there shall be many places, which are now

^bI Nephi xii: 4.

called valleys, which shall become mountains, whose height is great. And many highways shall be broken up, and many cities shall become desolate. * * And behold thus hath the angel spoken unto me; for he said unto me, that there should be thunders and lightnings for the space of many hours; and he said unto me, that while the thunder and the lightning lasted, and the tempests, that these things should be, and that darkness should cover the face of the whole earth for the space of three days.^c

Mormon's abridged description of the great cataclysms, after they had occurred, taken from the book of III. Nephi, is as follows:

And it came to pass in the thirty and fourth year, in the first month, in the fourth day of the month, there arose a great storm, such an one as never had been known in all the land; and there was also a great and terrible tempest; and there was terrible thunder, insomuch, that it did shake the whole earth as if it was about to divide asunder; * * * And the city of Zarahemla did take fire; and the city of Moroni did sink into the depths of the sea, and the inhabitants thereof were drowned; and the earth was carried up upon the city of Moronihah, that in the place of the city, there became a great mountain; and there was a great and terrible destruction in the land southward. But behold, there was a more great and terrible destruction in the land northward; for behold, the whole face of the land was changed, because of the tempest, and the whirlwinds, and the thunders, and the lightnings, and the exceeding great quaking of the whole earth; and the highways were broken up, and the level roads were spoiled, and many smooth places became rough, and many great and notable cities were sunk, and many were burned, and many were shook till the buildings thereof had fallen to the earth, and the inhabitants thereof were slain, and the places were left desolate; and there were some cities which remained; but the damage thereof was exceeding great, and there were many in them who were slain; * * * And thus the

^cHelaman xiv; 20-27.

face of the whole earth became deformed, because of the tempests, and the thunders, and the lightnings, and the quaking of the earth. And behold, the rocks were rent in twain; they were broken up upon the face of the whole earth, insomuch that they were found in broken fragments, and in seams, and in cracks, upon all the face of the land.^d

The second description of these truly awful occurrences in III Nephi is one that is attributed to the voice of God heard throughout the land by the survivors of that dreadful time:

And it came to pass that there was a voice heard among all the inhabitants of the earth, upon all the face of this land, crying, Wo, wo, wo unto this people; wo unto the inhabitants of the whole earth, except they shall repent, for the devil laugheth, and his angels rejoice, because of the slain of the fair sons and daughters of my people; and it is because of their iniquity and abominations that they are fallen. Behold that great city of Zarahemla have I burned with fire, and the inhabitants thereof. And behold, that great city of Moroni have I caused to be sunk in the depths of the sea, and the inhabitants thereof to be drowned. And behold that great city of Moronihah have I covered with earth, and the inhabitants thereof, to hide their iniquities and their abominations from before my face, that the blood of the prophets and the saints shall not come any more unto me against them. And behold, the city of Gilgal have I caused to be sunk, and the inhabitants thereof to be buried up in the depths of the earth; yea, and the city of Onihah, and the inhabitants thereof, and the city of Mocum, and the inhabitants thereof, and the city of Jerusalem, and the inhabitants thereof, and waters have I caused to come up in the stead thereof, to hide their wickedness and abominations from before my face, that the blood of the prophets and the saints shall not come up any more unto me against them. And behold, the city of Gadiandi, and the city of Gadiomnah, and the city of Jacob, and the city of Gimgimno, all these have I caused to be sunk, and made hills and valleys in the places thereof, and the inhabitants thereof

^dIII. Nephi viii; 5-18.

have I buried up in the depths of the earth, to hide their wickedness and abominations from before my face, that the blood of the prophets and the saints should not come up any more against them; * * * and many great destructions have I caused to come upon this land, and upon this people, because of their wickedness and their abominations.^e

But notwithstanding all that is said in these passages about the mighty changes which took place in the land, nothing is set down that helps us to determine definitely the nature of the physical changes as affecting Nephite lands. I believe, however, those changes were considerable; enough, at least to render worthless, except in a very general way, the conjectures sometimes made respecting Nephite lands and cities.

I am aware that the science of geology, which clearly granting the instability of our earth's crust, quite generally insists that the uplifting of continents and mountain ranges from the ocean's bed, and the subsidence of islands and continents into the ocean bottom is accomplished so slowly that long geological periods are required for the changes effected; and that the periods of time are so great that it is useless to measure them in time of which years shall be reared as units.^k But notwithstanding the very sound reasons, in

^eIII. Nephi ix:1-8, 12.

^k"With regard to the ages necessary for the accomplishment of the immense geological processes, the history of which is disclosed to us in the earth's strata, they certainly must have been of prodigious duration; for all the annals of humanity are but as a passing moment compared with the cycles of the globe. * * * * Professor Haughton, a mathematician, has endeavored to establish, according to the formula of Dulong and Petit, that the mere fall in the temperature of 25°, occurring previously to the present epoch of our planet, would require about 18 million of years. In the same way, the formation of each of the strata, which constitutes the sum-total of the geological records of the earth's surface must have taken up a long series of centuries before which the mind recoils in perplexity. ("The Earth" Reclus, Vol. I., p. 32).

the main, which are advanced for the slowness of this work, there is evidence of the fact, and also respectable authority for it, that sometimes very great changes of wide extent are made quite suddenly.

Sir Charles Lyell says:

While these proofs of continental elevation and subsidence, by slow and insensible movements, have been recently brought to light, the evidence has been daily strengthened of continued changes of level effected by violent convulsions in countries where earthquakes are frequent. There the rocks are rent from time to time, and heaved up or thrown down several feet at once, and disturbed in such a manner, that the original position of strata may, in the course of centuries, be modified to any amount.^l

Our modern world is fast coming to recognize Plato's story of the subsidence of the island-continent of Atlantis as something more than a fable. The story of that so-called island which by the Egyptian priest who related the tradition to Solon was represented as larger than "Lybia and Asia put together," is told in Plato's *Timæus*,^m as follows:

In those days the Atlantic was navigable; and there was an island situated in front of the straits which you call the columns of Heracles; the island was larger than Lybia and Asia put together, and was the way to other islands, and from the islands you might pass through the whole of the opposite continent which surrounded the true ocean; for this sea which is within the straits of Heracles is only a harbor, having a narrow entrance, but the other is a real sea, and the surrounding land may be most truly called a continent."ⁿ

^lManual of Elementary Geology, p. 46, 1852 edition.

^mReference is also made to Atlantis in his *Critias*. (Jowett's Trans. Vol. II.)

ⁿDialogues of Plato (Jowett's translation), Vol. II., p. 520.

Plato represents that in this land there was a great and wonderful empire which had dominion over the whole island, and its armies attempted to subjugate Egypt and Europe to its authority. In this conflict the very ancient Greeks won the applause of Europe and Egypt by withstanding well night alone the aggressions of the Atlantic empire. The Greeks are represented as having defeated and triumphed over the invaders, and now Plato:

But afterwards there occurred violent earthquakes and floods; and in a single day and night of rain all your warlike men in a body sank into the earth, and the island of Atlantis in like manner disappeared, and was sunk beneath the sea. And that is the reason why the sea in those parts is impassible and impenetrable, because there is such a quantity of shallow mud in the way; and this was caused by the subsidence of the island.^o

On the acceptance of Plato's story of Atlantis, both by ancient and modern writers, P. De Roo, in his "History of America Before Columbus," has an interesting chapter, from which I quote the following:

Not to speak of other ancient authors to whom we shall refer in the sequel, we may remark that the Jewish writer Philo (20 B. C.—54 A. D.), and the Platonist Crantor, were inclined to admit the literal interpretation of Plato's Atlantidic description. Tertullian (second century A. D.) and Arnobius (fourth century A. D.) agreed with the pagan savant Ammianus of Plato's island, Atlantis; and we have noticed that Cosmas Indicopleustes believed our continent [America] to be the cradle of the human race. It would not be difficult to find several authors of the first Christian centuries and of the middle ages who relied on Plato's narrative in their prophecies of discoveries in the mysterious west, and Christopher Columbus himself was undoubtedly encouraged by his belief in the objective truth of Plato's "Timaeus"

^oIbid., p. 521.

and "Critias;" but after our continent was again discovered at the end of the fifteenth century, almost every European scientist accepted the literal interpretation of the Athenian philosopher's description of countries in and beyond the Atlantic Ocean.^p

This passage is followed by a number of pages on the same subject, and many authorities are quoted in the margin, to which I commend the reader.

Elisee Reclus, author of "The Earth, a Descriptive History of the Phenomena of the Life of the Globe," and one of the highest authorities on physical geography, in speaking of an isthmus which once connected "the few clumps of mountains which formed, as it were, the rudiments of our Europe," with the American coast also says:

This isthmus was the Atlantis, and the traditions which Plato speaks of about this vanished land, were perhaps based upon authentic testimony. It is possible that man may have witnessed the submergence of this ancient continent, and that the Gunches of the Canary Islands were the direct descendants of the earliest inhabitants of this primeval land.^q

I also commend to the reader a recent volume on the subject by Ignatius Donnelly, published by Harpers, 1898, under the title "Atlantis;" and while I do not accept all the theories advanced by the author with reference to Atlantis, I recognize the fact that he has collected a great amount of evidence tending to establish the existence and the subsidence of Plato's island-continent. Of course for many ages Plato's story has been regarded as a fable, but, as Donnelly remarks, "there is an unbelief which grows out of ignorance, as well as a skepticism which is born of intelligence," and then he adds:

^pHistory of America before Columbus, Vol. p. 127, (Lippincott Co., Pubs., 1900.)

^q"The Earth," Vol. I., p. 36.

For a thousand years it was believed that the legends of the buried cities of Pompeii and Herculaneum were myths: they were spoken of as "the fabulous cities." For a thousand years the educated world did not credit the accounts given by Herodotus of the wonders of the ancient civilizations of the Nile and the Chaldae. He was called "the father of liars." Even Plutarch sneered at him. Now, in the language of Frederick Schlegel, "the deeper and more comprehensive the researches of the moderns have been the more their regard and esteem for Herodotus has increased." Buckle says. "His minute information about Egypt and Asia Minor is admitted by all geographers." There was a time when the expedition sent out by Pharaoh Necho to circumnavigate Africa was doubted, because the sun was north of them; this circumstance, which then aroused suspicion, now proves to us that the Egyptian navigators had really passed the equator, and anticipated by 2,100 years Vasquez de Gama in his discovery of the Cape of Good Hope.^r

It is not, however, upon the probability of the elevation and subsidence of this island-continent that I depend for support of my views with reference to the changes, being considerable, that have taken place in the western continents in comparatively modern times. There is enough evidence that is matter of record within recent years to establish the possibility of such changes having taken place. Le Conte, in his Compendium of Geology, says:

But great earthquakes are oftener associated with bodily movements of extensive areas of earth-crust. Thus, for example, in 1835, after a severe earthquake on the western coast of South America, it was found that the whole coast-line of Chili and Patagonia was raised from two to ten feet above sea-level. Again, in 1822, the same phenomenon was observed in the same region after a great earthquake. Again, in 1819, after a severe earthquake which shook the delta of the Idus, a tract of land fifty miles long and sixteen miles wide was raised

^rAtlantis, Donnelly, p. 3.

ten feet, and an adjacent area of 2,000 square miles was sunk, and became a lagoon. In commemoration of the wonderful event the elevated tract was called "Ullah Bund," or "mound of God." Again, in 1811, a severe earthquake—perhaps the severest ever felt in the United States—shook the valley of the Mississippi. Coincidentally with the shock, large areas of the river-swamp sank bodily, and have ever since been covered with water. In commemoration of the event, this area is still called the sunken country. In all these cases, probably, and in the last two certainly, there was a great fissure of the earth-crust, and a slipping of one side on the other.^s

Passing a number of descriptions of land elevations and subsidences which Sir Charles Lyell relates as occurring in Chili, in the nineteenth century, in order that I may give more attention to the lands supposed to have been occupied by the Nephites, I quote the following statement of this eminent geologist concerning the earthquake at Bogota, in 1827:

On the 16th of November, 1827, the plain of Bogota, in New Granada, or Colombia, was convulsed by an earthquake, and a great number of towns were thrown down. Torrents of rain swelled the Magdalena, sweeping along vast quantities of mud and other substances, which emitted a sulphurous vapor and destroyed the fish. Popayan, which is distant two hundred geographical miles south-southwest of Bogota, suffered greatly. Wide crevices appeared in the road of Guanacas, leaving no doubt that the whole of the cordilleras sustained a powerful shock. Other fissures opened near Costa in the plains of Bogota, into which the river Tunza immediately began to flow. It is worthy of remark, that in all such cases the ancient gravel bed

^sCompend. of Geology, Joseph Le Conte, pp. 145 and 146. See also p. 153. The disturbance in the Mississippi valley is also mentioned by Lyell (*Principles of Geology*, 1856 Edition p. 446.) He adds, that the ground on which New Madrid stood and the river bank for fifteen miles above, sank eight feet below their former level.

of a river is deserted and a new one formed at a lower level; so that a want of relation in the position of alluvial beds of the existing water-courses may be no test of the high antiquity of such deposits at least in countries habitually convulsed by earthquakes. Extraordinary rain accompanied the shocks before mentioned; and two volcanoes are said to have been in eruption in the mountain chain nearest to Bogota.[†]

The Encyclopedia Britannica, referring to the geographical formation of Colombia, also says:

The fundamental formations throughout Columbia are igneous and metamorphic, the great mass of the cordilleras consisting of gneiss, granite, porphyry and basalt. In many places the carboniferous strata have attained considerable development, though they have been thrown into strange confusion by some unknown disturbance.[‡]

The writer in Chamber's Encyclopedia, in speaking of Colombia, also says:

The geology of the country is very extraordinary. Everywhere, we are told are found traces of stupendous cataclysms and a disarrangement and intermixture of primitive and sedimentary rocks, which assume to put all classification at defiance.[‡]

Professor Winchell says:

We are in the midst of great changes, and are scarcely conscious of it. We have seen worlds in flames, and have felt a comet strike the earth. We have seen the whole coast of South America lifted up bodily ten or fifteen feet and let down again in an hour. We have seen the Andes sink 220 feet in seventy years
* * * * Vast transpositions have taken place in the coast-

[†]Principles of Geology, Lyell, p: 457, 1856 edition.

[‡]Art. Colombia.

[‡]Chamber's Ency., Art. Colombia.

line of China. The ancient capital, located, in all probability, in an accessible position near the centre of the empire, has now become nearly surrounded by water, and its site is on the peninsula of Corea. * * * There was a time when the rocky barriers of the Thracian Bosphorus gave way and the Black Sea subsided. It had covered a vast area in the north and east. Now this area became drained and was known as the ancient Lec-tonia: it is now the prairie region of Russia, and the granary of Europe.^w

Referring to Donnelly again:

The earthquake of 1783 in Iceland destroyed 9,000 people out of a population of 50,000; twenty villages were consumed by fire or inundated by water, and a mass of lava thrown out "greater than the bulk of Mont Blanc."^x

Professor Lyell, referring to the great earthquake which occurred on the island of Java, near the mountain of Galung Gung, on the 8th of October, 1822, says:

A loud explosion was heard, the earth shook, and immense columns of hot water and boiling mud, mixed with burning brimstone, ashes, and lapilli, of the size of nuts, were projected from the mountain like a water-spout, with such prodigious violence that large quantities fell beyond the river Tandoi, which is forty miles distant. * * * * The first eruption lasted nearly five hours; and on the following days the rain fell in torrents, and the rivers densely charged with mud, deluged the country far and wide. At the end of four days (October 12th), a second eruption occurred, more violent than the first, in which hot water and mud were again vomited, and great blocks of basalt were thrown to the distance of seven miles from the Volcano. There was at the same time a violent earthquake, the face of the mountain was utterly changed, its summits broken down, and one side, which had been covered with trees, became an enormous

^wThe pre-Adamites, p. 437.

^xAtlantis, p. 35.

gulf in the form of a semicircle. Over 4,000 persons were killed and 114 villages destroyed.^y

The following account of seismic disturbances is taken from Donnelley's work, "Atlantis:"

The Gulf of Santorin, in the Grecian Archipelago, has been for two thousand years a scene of active volcanic operations. Pliny informs us that in the year 186 B. C. the island of "Old Kaimeni," or the Sacred Isle, was lifted up from the sea; and in A. D. 19 the island of "Thia" (the Divine) made its appearance. In A. D. 1573 another island was created, called "the small sunburnt island." * * A recent examination of these islands shows that the whole mass of Santorin has sunk, since its projection from the sea, over 1,200 feet.^z

The fort and villages of Sindree, on the eastern arm of the Indus, above Luckput, was submerged in 1819 by an earthquake, together with a tract of country 2,000 square miles in extent.^a

In April, 1815, one of the most frightful eruptions recorded in history occurred in the province of Tomboro, in the island of Sumbawa, about two hundred miles from the eastern extremity of Java. It lasted from April 5th to July of that year; but was most violent on the 11th and 12th of July. The sound of the explosion was heard nearly one thousand miles. Out of a population of 12,000 in the province of Tomboro, only twenty-six individuals escaped. "Violent whirlwinds carried up men, horses, and cattle into the air, tore up the largest trees by the roots, and covered the whole sea with floating timber." (Raffles's "History of Java," Vol. I., 38.) The ashes darkened the air; "the floating cinders to the westward of Sumatra formed, on the 12th of April, a mass two feet thick and several miles in extent, through which ships with difficulty forced their way." The darkness in day-time was more profound than the blackest night. "The town called Tomboro, on the west side of Sumbawa, was overflowed by the sea, which encroached upon the shore, so that the water remained permanently eighteen feet deep in places where there

^y"Principles of Geology," p. 430.

^zAtlantis p. 37.

^ap. 38.

was land before. The area covered by the convulsion was 1,000 English miles in circumference. "In the island of Amboyna, in the same month and year, the ground opened, threw out water, and then closed again." (Raffles's "History of Java," Vol. I., p. 52.)

But it is at the point of the European coast nearest to the site of Atlantis at Lisbon that the most tremendous earthquake of modern times has occurred. On the 1st of November, 1775, a sound was heard underground, and immediately afterward a violent shock threw down the greater part of the city. In six minutes 60,000 persons perished. A great concourse of people had collected for safety upon a new quay, built entirely of marble; but suddenly it sank down with all the people on it, and not one of the dead bodies ever floated to the surface. * * * The water where the quay went down is now 600 feet deep. The area covered by this earthquake was very great. Humboldt says that a portion of the earth's surface, four times as great as the size of Europe, was simultaneously shaken. It extended from the Baltic to the West Indies, and from Canada to Algiers. At eighty leagues from Morocco the ground opened and swallowed a village of 10,000 inhabitants, and closed again over them.^b

Although Mr. Charles Darwin, one of the most conservative of scientists, usually insists that the elevation and subsidence of the earth's crust is accomplished by slow degrees and continues through long geological periods of time, yet in the report of his "Geological Observations," he records some very important evidences of recent elevations and subsidences as having taken place quite suddenly. One instance is in connection with an elevation on the Island of San Lorenzo, off the coast of Peru near Lima, in which he reaches the conclusion that the beach on that island has been raised 85 feet since Indian men inhabited Peru.^c He gives another instance of a recent elevation of land on the Island of Chi-

^bAtlantis p. 40.

^c"Geological Observations," third Edition, pp. 268, 269.

loe;^d and still another on the Island of Lemus.^e In speaking in a general way of the elevation on the western side of the South American continent, Mr. Darwin also says:

On the shores of the Pacific, upraised shells of recent species, generally, though not always, in the same proportional numbers as in the adjoining sea, have actually been found over a north and south space of 2,075 miles, and there is reason to believe that they occur over a space of 2,480 miles. The elevation on this western side of the continent has not been equable; at Valparaiso, within the period during which upraised shells have remained undecayed on the surface, it has been 1,300 feet, whilst at Coquimbo, 200 miles northward, it has been within this same period only 252 feet. At Lima, the land has been uplifted at least eighty feet since Indian man inhabited that district; but the level within historical times apparently has subsided.^f

Coming to more recent seismic disturbances, I call attention to the one which occurred in 1883 on an island in the straits of Sunda:

A great cloud was seen to rise above the island, and spreading out obscured the sun, while ash fell from the air. Upon the neighboring land the ground was shaken, while upon the low coasts, a great water wave rushed, destroying thousands of lives. "Krakatoa, which had not been in eruption in this century, had again broken forth, with the most terrific explosion that man had recorded. Ash rose miles in the air, and spreading out, fell on the surrounding land and water, and for a while it was so thick upon the surface of the sea, in the Straits of Sunda, that the progress of vessels was impeded. So high did it rise that the light ash, floating about by the upper winds, staid suspended in the air for months, some of it falling in America and Europe. A great water wave, generated by the explosion, crossed the Pacific to the California coast, and it was observed on the shores of Africa and Australia. When the eruption had ceased it was

^d"Geological Observations," p. 233.

^eIbid. pp. 232, 233.

^fIbid. p. 599. Also "The Earth," Vol. II., pp. 646, 647

found that Krakatoa had been split into two parts, one of which had disappeared into the air, leaving ocean water where there had been dry land. The part of the island that remained was covered with a deep coating of ash, and not a living thing was left, neither plant nor animal.^g

Speaking of the same event W. J. McGee, vice-president of the National Geographical Society, and ethnologist in charge of the Bureau of American Ethnology, says:

'This stupendous outburst cast up a cloud of gas and dust to a height of seventeen miles or more which darkened the sun for 150 miles in every direction, raised a sea wave reaching 135 feet in height on adjacent coasts, resounded in every direction for a thousand miles, and in one direction for 2,968 miles (if not indeed to the Antipodes), and sent out a series of great atmospheric waves rolling in both directions three times around the globe.^h

The authority last quoted also says that the New Madrid earthquake of 1811-12 shook an area of a million and a quarter square miles; and that the Charleston earthquake of 1886 was felt over nearly one-half million square miles of land, and far out at sea. He gives at length also a description of the recent earthquake in the island of St. Vincent, West Indies, which shook all Martinique by the force of its explosion. The magnetic disturbances swept in swift undulations for thousands of miles, passed Maryland and Kansas in a few seconds, and reached Honolulu a minute or two later; while the ensuing rain of rock-dust stretched eastward a hundred miles beyond Barbadoes, westward to Jamaica, northward to Texas, and to the South American continent.ⁱ

^gFirst Book of Physical Geography, R. S. Tarr, pp. 347, 348.

^h"The World Today," (Magazine), Vol. II., No. 1, July, 1902.

ⁱFor full description see the magazine entitled "The World Today," Vol. III., No. 1, July, 1902.

The conclusions to be reached from the facts here presented are, first, that while elevations and subsidences of the earth's crust are usually accomplished by slow degrees and through long periods of time, it is also true that very extensive changes are effected by internal forces of the earth in a very short period of time; and second, that there is reason for the belief that the seismic disturbances described in the Book of Mormon as taking place at the crucifixion of Messiah, effected very great changes in the physical character of the land occupied by the Nephites. If it should be contended that while the cases of earthquake disturbances cited in this chapter tell of widespread areas of country being suddenly and great effected, yet nowhere (except in the case of Atlantis) do those changes approach the magnitude of the physical changes called for in the views here set forth, the answer would be that nowhere else in the records kept by men is there an account of such terrible, such long-continued, and such widespread cataclysms in the earth as those described in the Book of Mormon. The terrible seismic disturbances which at the time of Messiah's crucifixion took place in the western hemisphere, continued through three hours of time (instead of a few minutes, as in the case of some of the most noted earthquake instances cited above); and effected the western continents from end to end, and were followed by three days of total darkness.^j And as the forces then operative surpass in their magnitude and time of continuance all other known instances of the kind, so too, may it be reasonably argued that the changes would be correspondingly greater than those effected by sim-

^jIt should be noted that the darkness accompanied some of the seismic disturbances cited in the foregoing accounts of earthquakes, notably in that of April, 1815, in the island of Sumbowa, see page 181, where "the darkness in the day time" is described as being more profound than the blackest night.

ilar instances of less magnitude and continued through brief-er periods of time.

In concluding this chapter—even though I have not yet arrived at the argumentative stage of my treatise—I would suggest that the cases of seismic disturbances here cited are sufficient both in their character and extent to warrant belief in the possibility of the terrible cataclysms described in the Book of Mormon, and that they effected great physical changes in the continents of America.