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Evidence of Divine Inspiration in Joseph Smith Derived from the Prophet's Teaching in Regard to the Extent of the Universe, Man's Place in it, and His Doctrine Respecting the Gods

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CHAPTER XXIX.

Evidence of Divine Inspiration in Joseph Smith Derived from the Prophet's Teaching in Regard to the Extent of the Universe, Man's Place in it, and His Doctrine Respecting the Gods.

If the church Joseph Smith organized is a monument to his divine inspiration; if the comprehensiveness of the work he introduced gives evidence that more than human wisdom was necessary to conceive it; if his proposed reconstruction of society as to its industrial aspects proclaims for him a divine wisdom—a still greater evidence of inspiration is to be seen in the prophet's teaching on the extent of the universe, man's place in it, and his doctrine respecting the Gods.

To make this appear it will be necessary to state briefly the opinions entertained on these subjects by those accepting orthodox Christianity before the introduction of the New Dispensation. Indeed, I may go as far back as the fifteenth and sixteenth centuries in this statement, in order that the reader may see what the real orthodox faith on all these subjects was before modern discoveries forced upon it some modification of its views.

In the centuries named the geocentric theory respecting the universe prevailed. That is, it was believed that the earth was in shape flat, and the immovable centre of the universe; that about it circled sun, moon and stars in regular order. Indeed it was supposed that the specific and only purpose for which the sun was formed was to give light and heat to the earth; and the moon and stars were formed to give light by

night in the absence of the sun. Above the earth was bent the vast dome of the blue sky, its edges apparently resting on the circumfluous waters. Above the blue sky was heaven, the abode of God and the blest; and under the earth was the dark region of hell, into which was thrust the wicked—the damned. It was believed that God, about six thousand year ago, created by a word, out of nothing all this universe —earth, sun moon stars and all things in the earth. That man and all living creatures were moulded from the dust, and then had breathed into them the spirit of life, and so became living creatures. This was the view "authoritatively asserted by the church,"[a] in the centuries I have designated.

There were, however, in those centuries a few bold spirits who held views at variance with those accepted by the orthodox. These believed in the heliocentric theory—the theory which regards the sun as the centre of our planetary system, and that the earth is comparatively a small and subordinate body revolving around it. This view was maintained by Nicholas Cusa, afterwards Cardinal Cusa, at the Council of Basil, in 1431. About a century later—1543—the great Copernicus issued the first formal announcement, in modern times, of the heliocentric theory. What storms of opposition the great philosopher anticipated may readily be perceived in the preface of his work. That preface was addressed to Pope Paul III., and in it, after referring to the imperfections of the prevailing theory, he states that he had sought among ancient writers for a better, and so had learned the heliocentric doctrine.[b] "I, too, began to meditate on the motion of the earth, and though it appeared an absurd opinion, yet since I knew that in previous times others had been allowed the privilege of feigning what circles they chose in

[a] "Intellectual Development of Europe" (Draper), Vol. ii, pp. 252-4.

[b] "Intellectual Development," Vol. ii, p. 255.

order to explain the phenomena I conceived that I might take the liberty of trying whether, on the supposition of the earth's motion, it was possible to find better explanations than the ancient ones of the revolutions of the celestial orbs. * * * * Though I know that the thoughts of a philosopher do not depend on the judgment of the many, his study being to seek truth in all things as far as is permitted by God to human reason, yet when I considered how absurd my doctrine would appear, I long hesitated whether I should publish my book, or whether it were not better to follow the example of the Pythagoreans and others who delivered their doctrines only by tradition and to friends. * * * * If there be vain babblers who, knowing nothing of mathematics, yet assume the right of judging on account of some place of scripture perversely wrested to their purpose, and who blame and attack my undertaking—I heed them not, and look upon their judgment as rash and contemptible."

In addition to recognizing the sun as the real centre of planetary motions, Copernicus taught also that the earth was a planet which turned upon its axis, and revolved around the sun.[c]

The person who most zealously accepted the Copernican system was Giordano Bruno, born in Italy, 1550. In his book, "The Plurality of Worlds" he taught that space is infinite; that every star is a sun having opaque planets revolving around it; and that these planets are inhabited. Bruno was a man of aggressive disposition and pushed his doctrines on public attention irrespective of consequences to himself. Because of his peculiar views he was compelled to flee from Italy. He first went to Switzerland, thence to England, where he delivered lectures at Oxford on Cos-

[c] "Newcomb's Popular Astronomy," Introduction, p. 6.

mology. Here his views were met with intolerance and he fled to France. Meeting with persecution in France, he next fled to Germany, and from thence ventured to return to Italy. He was arrested at Venice and imprisoned for six years. At the expiration of his long imprisonment he was demanded by the Holy Inquisition to be tried for having written heretical books. Accordingly he was given up to the authorities of Rome; and after an imprisonment of two years was tried, found guilty, excommunicated and delivered over to the secular authorities to be punished. "As mercifully as possible, and without the shedding of his blood," reads the sentence which delivered him to the secular authorities; "the abominable formula," remarks Draper, "for burning a man alive."[d] He was burned at Rome on the 16th of February, 1600. Some of the spectators remarked as he fell out of sight in the consuming flames that his soul had doubtless gone to some of the imaginary worlds of whose existence he had been so positive.[e]

It is suspected that this harsh treatment of Bruno, and in his person of the Copernican theory itself, checked for a time speculation on the lines of thought which Cusa, Copernicus and Bruno followed. Investigation, however, was afoot, and in an age when the people were just awakening to a sense of intellectual freedom, it could not be expected that a subject of such great interest would long remain unagitated. The man who next championed the Copernican

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[d] "Intellectual Development," Vol. ii, p. 258.

[e] I have read with some attention the apology which Catholics make for the church's harsh treatment of Galileo; but I have not yet found a writer among Catholics who attempts a defense of the church in this Bruno affair. Perhaps it is a credit to modern Catholics that they make no such effort. The incident stands, however, as an evidence of Catholic intolerance and bigotry, and shows how the apostate church of Rome had departed from the spirit of the Gospel of Christ.

system was the immortal Galileo. Early in the seventeenth century he invented the telescope, and by its aid made numerous discoveries which demonstrated the truth of the Copernican theory. He discovered that the planet Venus had phases like the moon, which demonstrated for her a motion around the sun. The discovery of this fact well nigh silenced the opposition to the Copernican theory, at least, among its more intelligent opponents who were capable of appreciating the value of the discovery. "If the the doctrine of Copernicus be true," they had said, "the planet Venus ought to show phases like the moon which is not the case." But the telescope of Galileo proved that Venus had phases and hence furnished the proof demanded by the objectors to the Copernican theory.

By means of his telescope Galileo also discovered the existence of innumerable stars not visible to the unaided eye. The ignorant multitude who assailed the Copernican theory of the universe, starting to argue from the supposition that the stars had been created merely to give light by night, said that since the stars which Galileo claimed to have discovered could not be seen by the naked eye, they could be of no use in giving light to the earth, and therefore they did not exist!

Galileo by turning his telescope upon the moon found that she had mountains casting shadows, and valleys like those of the earth. He also discovered four satellites of Jupiter, and their movement about their primary. As this furnished an illustration in miniature of the Copernican theory in the solar system, it was hailed with great delight by the ever increasing number that accepted the heliocentric doctrine.

Galileo, like Bruno, lacked the caution that characterized Copernicus, and by boldly affirming the truth of the

heliocentric doctrine, he brought upon himself the displeasure of the orthodox party, and finally the condemnation of the church. The controversy which arose over his doctrines and discoveries would require too much space to detail here. Let it be sufficient to say that he was tried before the Inquisition for teaching as a positive truth that the earh moves; hat the sun is stationary; and attempting to reconcile these doctrines with the scriptures. He acknowledged the charges made against him, and thereupon was commanded on pain of imprisonment to renounce these heretical opinions and pledge himself for the future not to defend or publish them. Doubtless the fate of Bruno, still sufficiently recent to be vividly remembered, influenced the conduct of the astronomer, for he gave the necessary pledges. The Inquisition in passing sentence on Galileo took occasion to say something of the Copernican system itself, denouncing it as *"that false Pythagorean doctrine utterly contrary to the Holy Scriptures."*

Galileo after his condemnation by the Inquisition received some consideration both from Pope Paul V, and Urban VIII, his successor, and from other high ecclesiastical authorities. Whether or not the considerate and even flattering treatment he received from these popes led him to think he could with impunity break the pledge he had so solemnly given the church not to publish more about or defend the Copernican doctrine, is difficult to determine; but it is a fact that he broke that pledge by publishing in 1632, the work entitled "The system of the world," the purpose of which was to establish the truth of the heliocentric doctrine. He was again summoned before the Holy Inquisition. His offenses were recited and he was told that he had brought upon himself the suspicion of heresy, and was liable to the penalties thereof—imprisonment or death. The Inquisition, however, was inclined to be merciful, and agreed to give him

absolution for his offenses if with real intent of heart he would abjure and curse his heresies. This the now aged philosopher consented to do. But that he might be a warning to others he was to be kept a prisoner at the pleasure of his judges, his new work was prohibited by public edict, and for three years he was condemned to recite once a week the penitential psalms. "In his garment of disgrace the aged philosopher was now made to fall upon his knees before the assembled cardinals, and with his hand upon the gospels, to make the required abjuration of the heliocentric doctrine and to give the pledges demanded. He was then committed to the prison of the Inquisition. The persons who had been concerned in the printing of his book were punished; and the sentence and abjuration were formally promulgated, and ordered to be publicly read in the universities."[f]

It has been claimed that Galileo as he rose from his humble posture before the cardinals exclaimed,—*soto voce*—"*ep pur si muove!*"[g] Whether the philosopher ever made the remark may be doubtful, but the truth nevertheless was that it did move, and it found those of a more daring spirit than Galileo to affirm it. Among these was Galileo's contemporary, the great Kepler.[h] He lived in Protestant Germany where, though as bitterly opposed by the Protestant Christians of Germany as Galileo was by the Catholics of Italy; and his advocacy and defense of the Copernican theory as emphatically condemned by the Theological Faculty of Tubingen as the Italian philosopher's efforts in the same line were by the Inquisition, yet, though the Academical Senate of Tubingen might prevent the publication of his works, he could not be threatened with death or imprisonment, nor

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[f] "Intellectual Development," Vol. ii, p. 264.

[g] "It moves however."

[h] Kepler was born near Stuttgard in Wurtemburg, 1571, died 1630.

could he be compelled to deny the truths he had discovered.

Kepler relieved the Copernican system from the erroneous hypothesis of circular orbits for the planets, by proving that the orbits were elliptical and have the sun as a common focus. This first discovery, known as Kepler's first law, together with his other two laws of planetary motion, establish the Copernican system upon an immovable basis by adding to the fact of the motion of the planets around the sun, the other fact that that motion is under the influence of never-varying mathematical law.

But one thing was lacking to complete the triumph of the new theory—an explanation of the force which held the planets in their orbits and balanced the universe. That explanation came in Newton's great law of gravitation, by which it is made know that "Every portion of matter in the universe attracts every other portion with a force varying directly as the product of the masses acted upon, and inversely as the square of the distance between them."[i]

The explanation of the Copernican system was now complete, and everywhere triumphant. Meantime larger and more powerful telescopes were being invented which constantly extended man's knowledge of the immensity of the universe. It is estimated that the unaided eye can see from five to eight thousand of the fixed stars; but with the aid of our modern telescopes, though no very reliable computation has yet been made, it is estimated that between thirty and fifty millions are visible;[j] and it only requires the invention of larger or more perfect telescopes to increase the number of God's creations to our already astonished vision!

It could only be expected that the facts discovered by our exact scientists would set in motion those of a speculative

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[i] "Gillet & Rolfe's Astronomy," p. 48.

[j] "Newcomb's Astronomy," p. 422.

turn of mind. Among those most noted for outstripping the plodding scientists and plunging into speculation were Kant[k] and Johann Heinrich Lambert.[l] The former taking the now well-known construction of the planetary system as the basis of his speculation advanced the idea that the whole stellar universe was constructed on the same plan. That is, as the planets of our solar system revolved about a common centre, and are kept from falling into each other or into the sun by the centrifugal force generated by their revolutions in their orbits, "so Kant supposed the stars to be kept apart by a revolution around some common centre."[m]

At that time but little, if anything, was known positively about the proper motion of the stars; and the objection was made to his theory that the stars were found to occupy not only the same position from year to year, but from age to age, and therefore could not be moving about a centre. To this the philosopher replied that the motion of the stars was so slow, their distances from us so immense, and the time of

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[k] Immanuel Kant, born 1724, died 1804. Those who know of Kant only as speculative philosopher may be surprised to learn that, although he was not a working astronomer, he was the author of a theory of the stellar system which, with some modifications, has been very generally held until the present time. Seeing the Galaxy encircle the heavens, and knowing it to be produced by the light of innumerable stars too distant to be individually visible, he concluded that the stellar system extended much farther in the direction of the galxy than it did elsewhere. In other words, he conceived the stars to be arranged in a comparatively thin, flat layer, or stratum, our sun being somewhere near the center. When we look edgewise along this stratum, we see an immense number of stars, but in the perpendicular direction comparatively few are visible. Newcomb, whom I am quoting, adds the following in a footnote: "The original idea of this theory is attributed by Kant to Wright, of Durham, England, a writer whose works are entirely unknown in this country, and whose authorship of the theory has been very generally forgotten." Newcomb's Astronomy, pp. 474-5.

[l] Born 1728, died 1777.

[m] "Newcomb's Astronomy," p. 475.

their revolutions so long that the movement was imperceptible to us, but he doubted not that "future generations by combining their observations with those of their predecessors would find that there actually was a motion among the stars."[n]

Lambert, the contemporary and a correspondent of Kant's, supposed "the universe to be arranged in a system of different orders. The smallest systems which we know are those made up of a planet with its satellites circulating around it as a center. The next system in order of magnitude is a solar system, in which a number of smaller systems are each carried round the sun. Each individual star which we see is a sun, and has its retinue of planets revolving round it, so that there are as many solar systems as stars. These systems are not, however, scattered at random, but are divided up into greater systems which appear in our telescopes as clusters of stars. An immense number of these clusters make up our galaxy, and form the visible universe as seen in our telescopes. There may be yet greater systems, each made up of galaxies, and so on indefinitely, only their distance is so immense as to elude our observation. Each of the smaller systems visible to us has its central body, the mass of which is much greater than that of those which revolve around it. This feature Lambert supposed to extend to other systems. As the planets are larger than their satellites, and the sun larger than its planets, so he supposed each stellar cluster to have a great central body round which each solar system revolved. As these central bodies are invisible to us, he supposed them to be opaque and dark. All the systems from the smallest to the greatest, were supposed to be bound together by the one universal law of gravitation."[o]

[n] "Newcomb's Astronomy," p. 476.
[o] "Newcomb's Astronomy," p. 477.

This, of course, in Lambert was speculative conjecture, based on the few facts that astronomers had discovered up to his day. There was no evidence, astronomers said, of the existence of the opaque centers referred to by Lambert, and they relegate the sublime ideas of the philosopher to the realm of pure speculation.

Later the German astronomer Madler[p] attempted to show from an examination he made of the motion of the stars that the whole stellar universe was revolving around the star Alcyone, in the constellation of Pleiades. No more weight, however, has been given by astronomers to the conjectures of Madler than to those of Kant or Lambert. The ideas of all three have been held to be mere baseless speculation.[q] There is this to say, however, in favor of the theories of Kant, Lambert and Madler, and against the astronomers who condemn their conjectures: the stars which, in the days of the two former, at least, were generally supposed to be stationary and hence called fixed stars, are now known to have "a proper motion," by which astronomers mean "not an absolute motion, but only a motion relative to our system. As the sun moves, he carries the earth and all the planets with him; and if we observe a star at perfect rest while we ourselves are thus moving, the star will appear to move in the opposite direction. * * * Hence from the motion of a single star it is impossible to decide how much of this apparent motion is due to the motion of our system, and how much to the real motion of the star. If, however, we should observe a great number of stars on all sides of us, and find them all apparently moving in the same direction, it would be natural to conclude that it was really our system which was moving and not the stars. When Herschel

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[p] Johann Heinrich Madler, born 1794, died 1874.

[q] "Newcomb's Astronomy," p. 466.

averaged the proper motions of the stars in different regions of the heavens he found that this was actually the case. In general the stars moved from the direction of the constellation Hercules, and toward the opposite point of the celestial sphere, near the constellation Argus. This would show that, relatively to the general mass of the stars, our sun was moving in the direction of the constellation Hercules."[r]

As our sun is conceded to be one of the stars—one of the smaller ones, too, of the great galaxy that spans the heavens—if it be in motion, the inference that other stars are also in motion is not unreasonable. Indeed they are known to be in motion, but there appears to be, so far as the observations of astronomers enable them to determine, no regularity in that movement more than the general movement noted from the direction of Hercules. "So far as they have yet been observed," says Newcomb, "and indeed so far as they can be observed for many centuries to come, these motions take place in perfectly straight lines. If each star is moving in some orbit, the orbit is so immense that no curvature can be perceived in the short arc which has been described since accurate determinations of the position of the stars began to be made. * * * The stars in all parts of the heavens move in all directions, with all sorts of velocities. It is true that by averaging the proper motions, as it were, we can trace a certain law in them; but this law indicates, not a particular kind of orbit, but only an apparent proper motion, common to all the stars, which is probably due to a real motion of our sun and solar system."[s]

The assertion of the fact on the part of our exact masters in working astronomy that there is a motion among the stars, places under the speculations of Kant, Lambert and

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[r] "Newcomb's Astronomy," p. 466-7.

[s] "Newcomb's Astronomy,' p. 466.

Madler the groundwork of a great probability in respect to their main idea, which I understand to be, that as the planets move around the sun in regular order, influenced by unvarying law, so the stars that make up the visible universe move around one or more centres. These centres are yet unknown. Madler may have been mistaken in pointing to Alcyone as that centre, but who shall say that one does not exist?

Meantime we need not follow this matter further. Enough has been said to show that the false geocentric theory has been displaced by the heliocentric doctrine, which has been demonstrated to be true. The earth is no longer looked upon as the centre of the universe, with the sun, the moon and stars especially created to revolve about it, to give it light by day and preserve it from total darkness in the night. The burning of Bruno, the imprisonment of Galileo by the Catholics, the condemnation of the works of Kepler by the Protestants of Germany, could not save the erroneous geocentric theory. It went down as all error in the end must go down. The earth, instead of being the immovable centre of the universe is relegated to its true place—it is one of a number of planets, one of the smaller ones—that revolve around the sun. With all its islands and continents; its rivers, lakes and mighty oceans; its mountains and valleys; its towns, cities, and all the tribes of men, together with all their hopes and fears and petty ambitions—all is but a moat in God's sunbeam—a single grain of sand on the seashore! Our solar system itself, magnificent as it is in its greatness, is nevertheless insignificant in comparison with the visible universe of which it is only so small a part. Says a popular author:

"As there are other globes like our earth, so, too, there are other worlds like our solar system. There are self-luminous suns exceeding in number all computation. The dimensions of the

earth pass into nothingness in comparison with the dimensions of the solar system, and that system, in its turn, is only an invisible point if placed in relation with the countless hosts of other systems which form, with it, clusters of stars. Our solar system, far from being alone in the universe, is only one of an extensive brotherhood, bound by common laws and subject to like influences. Even on the very verge of creation, where imagination might lay the beginning of the realms of chaos, we see unbounded proofs of order, a regularity in the arrangement of inanimate things, suggesting to us that there are other intellectual creatures like us, the tenants of those islands in the abysses of space.

"Though it may take a beam of light a million years[t] to bring to our view those distant worlds, the end is not yet. Far away in the depths of space we catch the faint gleams of other groups of stars like our own. The finger of a man can hide them in their remoteness. Their vast distances from one another have dwindled into nothing. They and their movements have lost all individuality; the innumerable suns of which they are composed blend all their collected light into one pale milky glow.

"Thus extending our view from the earth to the solar system, from the solar system to the expanse of the group of stars to which we belong, we behold a series of gigantic nebula creations rising up one after another, and forming greater and greater colonies of worlds. No numbers can express them, for they make the firmament a haze of stars. Uniformity, even though it be the uniformity of magnificence, tires at last, and we abandon the survey, for our eyes can only behold a boundless prospect, and conscience tells us our own unspeakable insignificance!"[u]

That philosophy which considered the earth to be the immovable centre of the universe with sun, moon and stars performing a daily revolution about it was not more erroneous than that which asserted the earth and the universe to

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[t] "And light travels at the rate of 198,000 miles per second.

[u] "Draper's Intellectual Development of Europe," Vol. ii, pp 292-3.

be instantaneously created about six thousand years ago, out of nothing.

The doctrine that the earth and universe were created out of nothing, need not detain us a moment. The absurdity of such a proposition is self-evident, and is becoming quite generally conceded.

Of the idea that the earth and the heavens, by which I understand is meant the universe, were created about six thousand years ago, it is only necessary to say that the discoveries men made in astronomy led them to question the correctness of that theory. Men have learned that there is a progressive movement in light. That is, the rays of light emitted by an object, "and making us sensible of its presence by impinging on the eye, do not reach us instantaneously, but consume a certain period in their passage. If any sudden visible effect took place in the sun, we would not see it at the absolute moment of its occurrence, but about eight minutes later, this being the time required for light to cross the intervening distance."[v] It is said by astronomers that there are objects in the heavens so distant that it would take many hundreds of thousands of years—allowing that light travels at the rate of 198,000 miles per second—for their light to reach us; and since we see them it necessarily follows that they have existed long enough at least for their light to reach us, that is for hundreds of thousands of years. They, at least, were not created six thousand years ago, but long before that time. If the orthodox theory was wrong as to the time when those distant worlds were created, may it not be equally wrong concerning the age of the earth?

Of course, it cannot be expected that in this work the writer can give any extended review of the evidence which geology furnishes of the great age of the earth. It will be

[v] "Intellectual Development of Europe," Vol. II, p. 299.

enough to say that when men look upon the earth, and take note of those forces which today are producing the gradual changes in the structure of its islands, continents, mountain ranges and deltas, and then attribute the changes which have evidently taken place in the past to the operation of those same forces, they see on all sides of them evidences of a very great antiquity for the origin of the earth.

It is generally conceded that all the heat we now have upon the surface of the earth comes from the sun; but this only effects the surface of the earth to the extent of a few feet at most. It has been determined, however, by experiments so many times repeated, and in all parts of the earth, that it cannot be attributed to any merely local cause, that beyond the few feet of the earth's surface affected by the sun's heat, a stratum of invariable temperature is discovered, beneath which, as we descend, the heat increases at the uniform rate of one degree Fahrenheit for every fifty or seventy feet. The uniformity of this rate implies that at no great depth a very high temperature must exist. "We have every reason to believe," remarks Newcomb, "that the increase of say one hundred degrees a mile continues many miles into the interior of the earth. Then we shall have a red heat at a distance of twelve miles, while at the depth of one hundred miles the temperature will be so high as to melt most of the materials which form the solid crust of the globe."[w]

The globular form of the earth is also looked upon as evidence of its original fluidity; while the existence of volcanoes, found all over the land, as well in the frigid as the torrid zone; in ocean beds as well as in the interior of continents, proving that they are not merely local, or depend on restricted areas for the liquid lava they belch forth—are supposed to furnish indisputable evidence that the interior of

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[w] "Newcomb's Astronomy," p. 305.

the earth is now as its whole mass once was, white-hot, molten matter.

Granting that the whole earth was once such a ball of fire, the time for the cooling of such a mass to the present depth of the earth's crust would require a much longer period than the sometime orthodox view of the Bible account of creation allows. "The age of the earth," remarks Draper, "is not a question of authority, not a question of tradition, but a mathematical problem sharply defined; to determine the time of cooling a globe of known diameter, and of given conductibility by radiation in a vacuum."

It would unquestionably require a great length of time for the thinnest of crusts to form on such a globe; long ages for the immense clouds of gases and vapors in which the mass revolved to be separated into oceans and atmosphere. Then followed upheavals from the ocean's bed—some gradual, some abrupt—the mountains appeared, bleak and bare, dripping only with the ocean's slime. Then came the action of atmosphere and floods of rain upon them. Mountains were melted down and valley formed. Then followed depressions and more upheavals; vast quantities of the interior lava were thrown to the surface through immense rents in the earth's thin crust, and in time cooled. The ocean receded here and advanced there, mountain chains, islands and continents were as unstable as clouds, when viewed in geological time. Constantly the earth's crust grew thicker and more stable as the mass of molten matter within was more securely confined.

In time vegetation appeared and so did animal life. Still the operation of depression and elevation went on, as is evident from the fact that imbedded in various strata of the earth's crust, at great depths, are found the remains of animals whose species is long extinct; while on mountain tops

are found imbedded in rocks in the region of perpetual snow the fossil remains of animals that only inhabit the ocean.

All these changes, necessarily gradual and slow, require periods of time so vast that the finite mind fails to grasp them. The book of nature, made up of the earth's crust, turn to what page of it you will, says the author I have so frequently quoted,

"Tells us of effects of such magnitude as imply prodigiously long periods of time for their accomplishment. Its moments look to us as if they were eternities. What shall we say when we read in it that there are fossiliferous rocks which have been slowly raised ten thousand feet above the level of the sea so lately as since the commencement of the Tertiary times? * * * That, since a forest in a thousand years can scarce produce more than two or three feet of vegetable soil, each dirt-bed is the work of hundreds of centuries? What shall we say when it tells us that the delta of the Mississippi could only be formed in many tens of thousands of years, and yet that is only as yesterday when compared with the date of the inland terraces? * * * * If the depression of the carboniferous strata of Nova Scotia took place at the rate of four feet in a century, there were demanded 375,000 years for its completion—such a movement in the upward direction would have raise Mount Blanc. * * * It would take as great a river as the Mississippi millions of years to convey to the Gulf of Mexico as much sediment as is found in those strata. Such statements may appear to us, who with difficulty shake off the absurdities of the patristic chronology, wild and impossible to be maintained, and yet they are the conclusions that the most learned and profound geologists draw from their reading of the book of nature."[x]

While not accepting all the conclusions of geologists, and certainly not all their speculations—because they do not know what conditions have existed in the past, nor can they be sure that the forces which they now see operating are

[x] "Intellectual Development of Europe," Vol. II, p. 334.

the only ones that have operated in all past time—yet the evidence is very clear that the earth has a much greater age than was attributed to it by the orthodox explanations of the scriptural accounts of creation. It is now generally conceded that the six creative days spoken of in Genesis are not six ordinary days, but six long creative periods. So strong is the proof of the great age of the earth, however absurd some of the conjectures of geologists may be considered, that no one undertakes to dispute it.

Thus the ideas of men as to the relation of the earth in time as well as its relation in space have been completely changed within the last century. Illimitable ages of duration corresponding to infinite space, leads up to a grander conception of the universe and prepares the mind for a better comprehension of God and his works.

So far I have considered these changes in the ideas of men relative to the universe as they have been affected by the researches of scientists and speculative philosophers. It now remains to show that while these philosophers have been plodding their way through slow discovery and precarious conjecture towards the truth; wholly apart from them and independent of them, there sprang into existence a philosophy pertaining to duration, space, matter, the earth's place in the universe, the universe itself, the relation of man therein and the Gods which, while running parallel with the truths that scientists have discovered, goes far beyond them, and demonstrates a divine inspiration as its source.