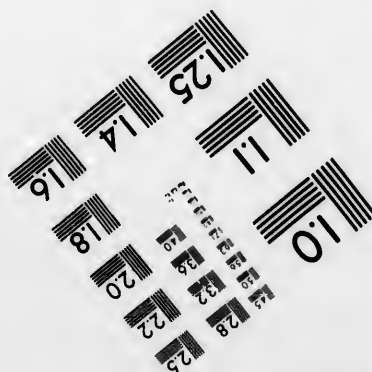
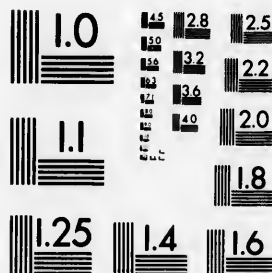


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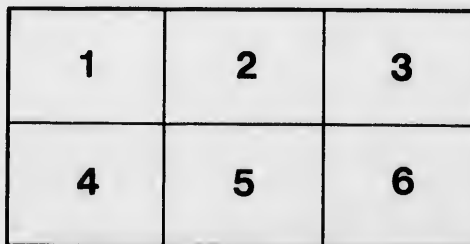
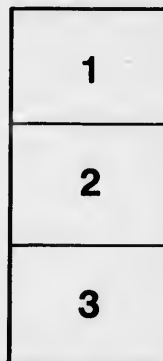
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—OF THE—
GREAT MYSTERY;

OR,

An Explanation of the Cause which Brought
a Flood Over the Whole Face of the
Terrestrial Globe in one Year.

ALSO,

An Explanation of the way the Coal Fields
became covered with various sorts of
Deposits, including Material for
Shale, Sand Rock, &c.

—BY—

PROF. J. WESLEY CROUTER.

PRICE, 25 CENTS.

*This new scientific dogma is not a hypothetical theory. The conclusions
stated in the work are based on absolutely true principles.*

London, Ont.:
FREE PRESS PRINTING CO.,

1889.



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THE SOLUTION
— OF THE —
GREAT MYSTERY;

— OR, —
AN EXPLANATION OF THE CAUSE WHICH BROUGHT A FLOOD OVER THE WHOLE
FACE OF THE TERRESTRIAL GLOBE IN ONE YEAR.

— ALSO, —
AN ENTIRELY NEW EXPLANATION OF THE
FORMATION OF COAL FIELDS.

— ◆ —
This explanation is not only altogether different from the accepted theories of the present age, but the scientific gentlemen who have heard my new theory have admitted that it was the most reasonable one they ever considered. Captain John Smith, H. H. B., officer, a gentleman of superior attainments and abilities, who built the first steamer that sailed on the great McKenzie River, said he would not have missed hearing my lecture, which treated on the subject, for \$20. Many other gentlemen have expressed very favorable opinions of the lectures.

— ◆ —
The scientific truths and facts adduced in this work to substantiate the idea of a Deluge, and the Formation of Coal Fields, the principal portions of which were deposited at the time of it, are honestly admissible by every scientist. It is the idea, that there was a general Deluge (instead of a partial Deluge, as taught by Modern Graduates of Colleges), which is new, and not the facts used to prove it.

— ◆ —
If this work had been set in the same size of type and page as Prof. Dawson's work on the "Origin of the World," it would have made 90 pages. Dawson's work comprises 434 pages; hence, it does not contain five times as much matter as "The Solution of the Great Mystery." The price of Dawson's work was \$2 in Montreal. At the same rate, the price of "The Solution of the Great Mystery" ought to be 40 cents, but the price is only

TWENTY-FIVE CENTS.

This price has been fixed for this work, in conformity with the custom of charging a higher price for scientific works than for novels of equal size of book. This work, which gives a demonstrated explanation of a scientific question, is worth more than another work which gives merely a hypothetical explanation, the truth of which is not absolutely certain.

Entered according to Act of Parliament of Canada, in the year one thousand eight hundred and eighty-nine, by John Wesley Crouter, in the Office of the Minister of Agriculture.

One of the objects I had in view in writing this work was to commemorate the memory of my noble-hearted Father, Abraham Crouter, and my beautiful and affectionate Mother, Maria Crouter, whose spirits, I believe, are now in heaven, and whose worthy example and tender care I did not fully appreciate when I was young.

J. WESLEY CROUTER.

Winnipeg, Man., Feb., 1889.

1889

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SOLUTION OF THE GREAT MYSTERY.

The following quotations from the Rev. Dr. Talmage's sermon are made from memory. Those who read the sermon will remember them. I have endeavored to re-state the substance of his remarks. Rev. T. De Witt Talmage, D. D., stated in a "Sermon on the Deluge," that "he believed" in the Bible account of a general flood, but he said "he could not explain the physical cause that produced it." He said "that the Deluge may have been caused by the tail of a comet, or by changing the atmosphere into water."

It need not be surprising that this great theologian is not a great physicist. The usual college course of education, which is regarded as necessary to fit a student for the ministry, does not include a thorough scientific course of study; nor should it be considered surprising to the scientist, that the Rev. Dr. Talmage could stand up before a Brooklyn audience and make the statement he did, as to the cause of the Noachean flood, without lowering himself in the estimation of his vast congregation, for, perhaps, not over three in a hundred of his audience understand physical science better than he does.

Now any manager of a metropolitan newspaper, understands that it would not be business for him to allow an adverse criticism of anything that Dr. Talmage has said to appear in the columns of his paper. Whereas, it would be safe for any editor to take up a cudgel, in the form of a penholder, and, with a pen thereunto attached, chastise the author of this essay in a vigorous manner for his presumptuousness in criticising Dr. Talmage, for he would be countenanced not only by the readers of the paper, but by college professors also, since the author has undertaken to demonstrate that some of the popular theories taught by them are founded on hypothesis only.

Before criticising the opinions as to the cause of the Deluge referred to, it will be fair to the Rev. Dr. Talmage, for me to state that I regard him as the greatest religious and ethical teacher of the age. I have read quite a few of the sermons delivered by Dr. Talmage. I always become deeply interested in them. His sermons are so full of ethics, pithily expressed in his own original, unique and eloquent manner, that I seldom become weary in reading them, which is more than I can say of the sermons of some other noted divines. It

is no dislike to Dr. Talmage, or his method of sermonizing, that I have thought fit to criticise a couple of his remarks, and the Doctor is not specially to blame for giving them. He might have searched all the books, and he could not have found a better solution of the cause which produced a general deluge than those instanced by him.

I feel somewhat reluctant to begin my criticism, for, when I get started, I go headlong; wherefore, some who do not know me might think that I am churlish; whereas, those who know me best, hold the opinion that I am good natured in disposition.

The idea that a comet might have caused the drift was given by Ignatius Donnelly, in his work entitled "Ragnarok." I read the greater part of this work several years ago. I searched it in order to see if he held the same idea as to the cause of a Noachean flood that I did, but I failed to find even a clue in it as to the cause which produced a general or even a partial deluge. Dr. Talmage may have thought that if a comet caused the drift, that it could have quite as easily caused a flood. Now, when it is known that comets are so diaphanous that the faintest stars can be seen through the tails of them, it is doubtful, even if comets are formed of aqueous vapor, if one of them should leave the whole of its tail on the earth, whether such an addition to the water of the earth would make a general flood. One astronomer said, that the materials composing the tail of a comet are so thin that they could be condensed and drawn through a finger-ring. Surely, such an amount of matter composing the tail of a comet could not make such an increase in the volume of water on the earth, so as to cover all the mountains, for there would have to be a vertical increase of water from the surface of the oceans upwards to the extent of five miles. Water seeks its level, and some of the mountains are five miles high. It was this difficulty, viz., the height of some of the mountains, which doubtless led some of the theologians to accept the hypothesis of a partial deluge, and then to explain the words "flood on the earth," not to mean the whole face of the terrestrial globe, but a valley where the descendants of Adam and Eve lived, and that the mountains spoken of in the Bible, simply meant some hill-like elevations of land which the then existing people called mountains. The ministers of a hundred years ago were

quite as well versed in Hebrew as those who preach at the present time. The ministers of the eighteenth century understood the reading of the 7th chapter of Genesis to mean the flooding of the whole earth. The idea, that only a small area of the earth was populated before the Noachean deluge, is not scientific.

From the creation to the flood, according to Jewish Chronology, there was a lapse of over sixteen centuries, 1655 years. It has been estimated by statisticians that the human race will double their numbers every thirty years. This estimate will not hold true in over-populated centres, or those countries from which there is a large emigration annually. But in the antediluvian era, the human race was long-lived and robust, and the Bible informs us that they begat sons and daughters; thus, if the births which followed each other were at the same rate as among the robust families of the Western States, there would be a birth on an average every two years. What, then, must have been the number of children that some of the ancient antediluvian patriarchs had!

Doubtless, in the first centuries after Adam, the human race doubled in number every twenty-five years. But, assuming that the human race before the flood only doubled in number every fifty years. In a thousand years the geometrical increase would be over a million. And in six hundred years more, the one million would become four thousand and ninety-six millions, or two thousand seven hundred and sixteen millions—more inhabitants than there are on the earth to-day. Either, then, the scientific idea formulated by statisticians is incorrect, or the whole earth would have been populated before the flood. It will not do for scientific theologians to argue that the antediluvians were a sickly people, and therefore not prolific; but they have Scripture grounds for stating that the earth was filled with violence. It is quite reasonable to conclude that in the thickly settled places the people wrangled for food. They would fight for the possession of new territory, and in this way many thousands would be destroyed. Did cannibalism exist then? The affirmative answer is supposable. If such was the case, over-population in some portions of the earth might have been prevented by the people eating each other, as the native inhabitants of Africa, and some islands did not a century ago, until they were taught more humane means of getting a living.

As the time since the flood is over twice as great as the time from Adam to Noah, and as vast portions of the earth are sparsely inhabited at the present time, it seems reasonable that the antediluvian population—though scattered

over the earth—was far less than the present population.

It is supposable that in the time of Noah, that for a little food, he could have secured the performance of a large amount of labor, so necessary in the construction of the ark, while these same laborers may have derided him for building a huge vessel which he would not be able to launch. Again, on the hypothesis that the human race must have vastly multiplied in numbers, they would migrate far beyond the vicinity of the Ark, the hunters would widen the bounds of their hunting grounds over every part of the earth they could reach by their means of traveling. According to this scientific fact, there was time enough from Adam to Noah to people the whole earth with human beings.

But there must have been an increase of animals also, and it is known that these creatures multiply in a greater ratio than human beings; and the increase of the number of animals is limited by the supply of food. It is reasonable that before the flood, that each kind of animal would spread over every part of the earth where there was suitable foods for them. Now, would it not seem a needless thing for Noah to construct a huge ark to keep animals alive, if they could exist during a local flood in those parts of the earth which were not submerged.

Col. Bob Ingersol animadverted on the character of God for bringing a flood on the earth to drown the people He made. Col. Bob Ingersol gave his voice in support of the American war. Had Bob Ingersol done valiant fighting, he would have boasted of that in his eloquent style of speeches. According to Bob Ingersol, the Southern people rebelled, and they owned slaves: because of these acts, though the war cost thousands of lives, and hundreds of thousands of wounded and suffering persons, he vindicated it. Before the flood the earth was filled with wickedness. The hearts of the people were bad, and the children would inherit the evil propensities of their parents, whereby the number of evil-doers would be increased. Death by drowning is painless, and the destruction of the inhabitants of the earth in this way was not so cruel as the American war. Yet, to win popularity among the skeptical Americans, Bob Ingersol eulogised the war, and condemned the action of God in bringing a flood on the earth to rid it of its cruel inhabitants. O Consistency, thou art a jewel!

But to return to the hypothesis that a flood was caused by a comet, which left its tail, composed of aqueous vapor, on the earth, so as to cover all the mountains. The next difficulty, founded on such an imaginary hypo-

thesis is, the finding a cause sufficient to remove the surplus water from the earth.

Those visionary men who read in order to know, and who are prone to imagine solutions to difficult questions, might conjecture that another comet without a tail might have come near the earth, and then, to put words into the mouth of an inanimate thing—we read of comets having a head, and this one under consideration is supposed to be without a tail—this comet in sad tones might have said, "O earth, you have a superfluity of water, and I have no tail. You could spare a portion of your aqueous covering, and I again could be adorned with a tail, whereby I will cease to provoke the humorous remarks of other comets, which have such magnificent caudal appendages. You will become more useful by your loss, for Noah and his offspring, and the living creatures with him in the ark, will rejoice in the fact that they are again living on the dry earth."

This visionary hypothesis may interest those who have a penchant for imagining speculative explanations, but it cannot be accepted by sound scientists. There is a physical law which would render it impossible for the earth to part with a portion of its water by means of a passing comet coming near enough to the earth to exert an attractive force sufficient to draw away any of the water of it. A body separated from the earth, and near enough to exert an attractive influence on the earth, would be mutually attracted by the earth; so that the two bodies would be drawn together, and gravity would prevent their separation.

This work contains an explanation of a cause sufficient to produce a general flood. The explanation is founded on fact; hence the fantastical idea that a general flood was caused by a comet may be discarded.

Rev. Dr. Talmage, in the same sermon on the Deluge, said that the flood might have been caused by changing the atmosphere into water.

Now, every chemist knows that water is a compound of *Hydrogen* and *Oxygen*, and that air is a compound of *Nitrogen* and *Oxygen*; and every chemist and every graduate doctor of medicine knows that by no known chemical law can nitrogen and oxygen, the elements of which air is composed, be changed into water. But, even if it were possible to change air into water, there is not enough of it to make water sufficient to submerge the mountains. Water changed into hydrogen and oxygen increases in volume a 1,000 times; hence, a column of this gas one mile square and fifty miles high, would make a volume of water one mile square and a

twentieth of a mile deep. The air is supposed to extend to the height of forty-five miles from the earth. Now, such an amount of gaseous substances, which envelops the earth, could not make water enough to cover the hills rising seventeen rods above the level of the ocean.

Notwithstanding this scientific principle, Dr. Talmage could risk his reputation as a preacher, by stating to his congregation, and through the press to the christian world, that a flood sufficient to submerge the earth and all mountains thereof, might have been caused by turning the atmosphere into water.

CONSIDERATION OF THE PRINCIPLES ON WHICH IS BASED THE THEORY OF A GENERAL DELUGE.

The centrifugal force is caused by the revolution of bodies. The following common observation illustrates and proves this:—When water is poured on a rapidly revolving grindstone a portion of the water is thrown off in an oblique direction from it. The centrifugal force which makes the water fly away from the stone was caused by the rotary motion of the body. A boy fastens a ball to a string, then, taking hold of the string, he makes the ball revolve around his hand in an orbit. If, now, he lets go of the string, the ball will fly away. The centrifugal force, which made the ball fly away in this instance, was caused by the revolution of the ball in an orbit.

The centrifugal force acts on matter in proportion to density. Illustrative proof:—Let a number of balls of equal size, part of them made of wood having different densities, and a part of them of metal; let these balls be attached to the rim of a wheel by short India rubber strings. Now, if the wheel is made to revolve rapidly, it will be seen that the heaviest balls will be forced farthest from the rim of the wheel, and the lightest ones the least distance, while the other balls will be forced to intermediate distances from the wheel. A sphere is a solid body, the single surface of which is every way equally distant from the centre. A sphere is round, in the shape of a ball. A spheroid is a body, not a perfect sphere, but approaching to the form of one. A prolate spheroid is a body shaped somewhat like an egg. An oblate spheroid is a body shaped quite like an orange. The earth is in the form of an oblate spheroid. Spheroidness means a body in the state or form of a spheroid. The spheroidness of the earth is due to the centrifugal force produced by its rotary motion. The earth rotates daily. The surface of the earth at the equator moves at the rate of 1041 miles an hour. This rotary motion caused a force sufficient not only to

upheave mountains, but to bulge the earth out at the equator, so as to make the equatorial diameter twenty-six miles greater than the polar diameter. The uniform rotary motion of the earth preserves the spheroid form of it, just as the uniform motion of an engine keeps the governor balls revolving at a distance from their axis. The following experiment can be used to illustrate the principle of the centrifugal force which produced the spheroidness of the earth:—Let a hollow sphere, of about ten inches in diameter, be made of India rubber to represent the earth. Let the letters N. P., signifying the North Pole, be placed on it, and the letters S. P., signifying the South Pole, be placed on the opposite side of the ball at equal distance from N. P.; then let a white line be drawn around the ball an equal distance from N. P. and S. P. to represent the equator; then mark two points on the equator opposite each other, with the letters A. and C., signifying Antipodes and Cispodes, respectively; then make holes in the ball at the points marked, so that a spindle can move freely in them. Now make a spindle with a fork-like attachment near one end of it; then add a crank to that end. Now thrust the spindle through the ball from N. P. to S. P. until the fork pierces the ball; then mount the ball so that it may be turned. Now, while the ball is in rapid motion, it will be observed that the diameter of the equator of the ball is increased, and the polar diameter is diminished, the sphere having become an oblate spheroid; and it will remain so if the uniform motion of the ball is continued. Now, if the spindle is removed from the ball, and then thrust through it from C. to A., and then remounted and again caused to revolve rapidly, then the points C. and A. will become flattened, and the points N. P. and S. P., with the rest of the new equator, will be bulged out. Now withdraw the spindle; then let outlines, to represent islands and continents, be drawn on the sphere, and then let the islands and continents be faced with pieces of lead of various thicknesses, the thicker pieces to represent ranges of mountains, and pieces somewhat thinner than these to represent certain elevations of land, such as ranges of hills and elevated plateaus, and the thinnest pieces to represent the lower levels of land. Now let the sphere again be made to revolve rapidly, then as the centrifugal force acts on matter at the surface of a rotary body in proportion to weight, whereby the heavier and heaviest parts are forced further and furthest outward, the surface of the sphere will approximate the external configuration of the earth.

It has been demonstrated by a number of

ingenious calculations, that the equatorial diameter of the earth is twenty-six miles greater than the polar diameter. That the equatorial diameter of the earth exceeds the polar diameter is inferable, from the fact that the earth rotates daily, whereby a centrifugal force, sufficient to bulge out the earth at the equator, is produced. Inferentially, the materials underlying the oceans are lighter than the materials underlying the continents. Doubtless sulphur is one of the substances which exist underneath the rocky bed of the oceans. The heavier metals are forced into the mountains, save where they are carried along with the detritus of the mountains by streams to the valleys. If the interior portion of the gold and silver-bearing mountains were laid open, it is reasonable to conclude that an amount of gold and silver would be exposed to view, which would make miners' heads swim with ecstasy at the sight of it. According to this law, following the height of land between Hudson's Bay and the great lakes eastward to Labrador, there will be found numerous and rich deposits of gold, silver, copper, iron, &c. Not only was the magnitude of the solid parts of the earth upheaved by the centrifugal force, but the water of the oceans was bulged out at the equator, so that the surface of the water at the equator is thirteen miles further from the centre of the earth than it is at the poles.

If rotary motion of the earth should cease, the water would recede from the equator to the extent of six and a-half miles deep, and to a less and less extent, radiating to the rational horizon, and it would accumulate at the poles to the same extent, and gradually less outward from these points to the rational horizon from each of them, until the earth became a sphere. Expounders of natural phenomena suppose that the upheaval of the continents was caused by volcanic agency, or the cooling of the crust of the earth. But volcanoes would not cause the water of the oceans to stand out further from the centre of the earth than the waters in the polar regions? The conclusion is inevitable, that the centrifugal force produced by the rotary motion of the earth bulged out the earth at the equator, and to a gradually less degree to the rational horizon north and south of it; and the same force acting on the matter of the earth within a certain number of miles of the surface of it, having the greater density, upheaved the continents with their ranges of mountains and hills. Does any scientist doubt that, if the rotary motion of the earth should cease, gravity, acting alone, would pull matter in proportion to density towards the centre of the earth? Surely, then, as matter below the crust of the earth is incan-

descent, and of a yielding nature, gravity acting alone would pull down the heavier matter composing the continents, below the level of the sea; hence it is inferable that if the rotary motion of the earth should cease for a few months, the whole earth would be deluged; but it cannot be demonstrated that the rotary motion of the earth ever ceased, or even diminished in velocity; hence it cannot be demonstrated that a general flood was caused by the stoppage of the earth's rotary motion.

Let a point on the equator in South America be marked with the letter C, and another point marked A on the equator at the antipodes of it. Then, if the earth should make a quarter revolution from south to north and from north to south so as to bring the south pole to the point that was occupied by A, the north pole would then be brought to the point C. Then the points marked A and C would become a new north and south pole respectively. The new north pole would be underneath the north star, and the former points called the poles would occupy the same position towards the sun that the points marked A and C did. Such a partial revolution of the earth which would cause the arctic region to become a portion of the torrid zone, and the antarctic regions to become a portion of the torrid zone at the antipodes to it, would cause a deluge over the whole face of the terrestrial globe.

It is evident that with such a partial revolution of the earth from south to north the equator would not be of the same form that it is now. Two points of it would be each depressed thirteen miles; then, as the distance radiating from these points outward towards the rational horizon increased, the depression would be gradually less. At half of the distance from either of the said points to the rational horizon, from them the depression would be six and a-half miles; and at three-quarters of the distance the depression would be three and a quarter miles. The same depression would exist on the opposite side of the earth. Then the two new poles would be each of them thirteen miles too far out from the centre of the earth, and the elevation 45° south of the new north pole, would be six and a-half miles higher than it is now, and the south pole and antarctic regions would be similarly elevated beyond the present height estimated from the centre of the earth. This form of the earth could not continue, for gravity acting alone, as it does, at the poles, would pull the earth down so as to make it in harmony with the form of the earth as it existed before such a partial revolution from the south to the north took place. It has

been shown that when gravity acts independently of the centrifugal force, it pulls the heaviest matter lowest, so that all the earth now covered with water, after it was made to occupy that part of the earth within twenty degrees of the poles, would be drawn underneath the water.

It is supposed that there is an open sea at the poles of the earth. This supposition is founded on several observations. The natives of the arctic regions say that at a certain distance northward in their country, when winter sets in, wild water fowls are observed flying north, just as at a certain distance to the south of such points the fowls fly southward; though these observations do not absolutely prove an open sea at the north pole, the conjecture seems to be in harmony with the hypothesis. It may be that the wild fowls which have been observed flying northward simply take a short cut across the Arctic zone to the temperate regions, in the eastern hemisphere. It is hardly reasonable that wild fowls would remain in a latitude where, for four months of the year during winter the sun does not shine.

The best proof of the hypothesis that the region near the north pole is covered with water, is the scientific principle that gravity preponderates over the centrifugal force there. Doubtless, the north pole is surrounded with a vast sea, extending about twenty degrees in every direction from the pole, so that were it not for the ice there, a vessel might sail from the Atlantic Ocean to the north pole, and then southward through the Pacific Ocean. The breadth of such a sea from west to east would be vast, for the spread of the body of water extends from east to west, over twenty-five degrees, making the expanse of such a body 3474 miles from east to west. The expanse of the body of water at the south pole is fully as wide and long. The existence of Arctic and Antarctic oceans surrounding the poles is evidence that gravity has drawn all the solid matter underneath the surface of the water there. At the poles there is no centrifugal power to lessen the force of gravity. At a distance of four miles from either pole the circle of the earth is twenty-four miles; at a distance of four miles from the pole the surface motion of the earth is one mile an hour, for the earth rotates daily; at a distance of forty miles from the poles the rotary motion is ten miles an hour. Such a slow motion produces only a slight centrifugal tendency, and hence would only interfere but slightly with the law of gravity existing within a few degrees of the poles of the earth. The centrifugal force gradually increases in power from the poles towards the equator,

where it is greatest, since at the equator the rotary motion at the surface of the earth is 1041 miles an hour. A partial revolution of the earth, which would carry the centre of one of the antediluvian continents to the north pole, and the center of the other continent to the south pole, whereby one of the continents would occupy the same place that the antediluvian arctic regions did, and the other continent would occupy the same position that the antarctic regions did, would cause the submergence of both of them. For the centre of each of them would be drawn downwards to the extent of thirteen miles, and the sinkage would be gradually less, radiating from such a point outward to the rational horizon. Would any scientist doubt, that if the centre of that spread of land which constitutes Asia and Europe, should sink thirteen miles, and that the sinkage should be gradually less towards the rational horizon, that the whole vast expanse of land would not be drawn under water, especially when it is considered that the tidal waves, which would be the result of such a partial revolution of the earth, would be vast enough to sweep over the continents. If it had been the oceanic portions of the earth which had turned north and south to occupy positions in the former frigid zones, then not only would there have been a sinkage of the parts to the extent described, but the surplus water would, with a mighty tide, rush to the new equator, there to be bulged out just as it is now bulged out, to a height of thirteen miles further from the center of the earth than are the waters of the Polar Seas. The rapid motion of such a vast amount of water meeting the lunar tides, would create tides that would rush over all the antediluvian continents. But if the continents were moved to the poles, then as gravity acts in proportion to density, the continents in proportion to bulk being heavier than water, would be drawn down lowest; they would sink below the level of the sea, and therefore be submerged.

I will now demonstrate, on the basis of absolute facts, that the earth in some past time, made a partial revolution from south to north, and the points which previously constituted the poles were moved not only to the old equator, but past it, and they continued to oscillate until they reached a settled point, one in about 45° of north latitude, and the other in 45° of south latitude, on the opposite side of the earth. Such a demonstration will prove what scientists, having great names, have hitherto denied, viz., that a deluge, covering the whole face of the terrestrial globe at one time, ever occurred.

THE GLACIER THEORY.

It has been supposed by some geologists that the arctic and temperate zones were contemporaneously covered with ice. This supposition was founded on the fact that the surface of many series of rocks in one-half of the north temperate zone are grooved in a manner similar to the way rocks are grooved on the sides of mountains by descending glaciers. These geologists hold the hypothesis, which is simply a guess, that the earth has been cooling off for some hundreds of millions of years. At one time, they say, the greater part of the North American continent was covered with ice.

Now, in order that this ice could have moved over the level portions of the continents, a great body of water must have existed underneath it; besides, the climate must have been intensely cold in order to form icebergs of mountainous size, so that while they were moving they would grate on the rocks and groove them. Now, every seaman who has been accustomed to navigate the seas in far northern latitudes, has observed that those portions of the earth which are covered with large bodies of water, are warmer in winter than the interior of continents in the same degree of latitude. Even the Behring Sea, which is 20° north of the southern limit, of the ice-grooved rocks, is open in winter. Now, if there exists a tendency in the earth to cool off, what reversed the tendency so as to cause a temperate climate in 45° north latitude in the centre of North America? Any novice in science could easily understand that the amount of water and coldness necessary to form the ice which would groove the rocks in the centre of North America, would require a climate as cold as that which exists to-day in the Arctic regions. It is evident from observation that the upheaval of a continent does not increase the warmth of its temperature in the winter. The climate of Ohio is not arctic even in winter; besides, it must be remembered that the elevated plateaus of both North and South America are cooler than the lands at the coast line; hence it is evident that the tendency of the earth to cool off must have been reversed, so as to produce a temperate climate where an arctic climate existed, or the hypothesis that an ice period in the arctic regions, and what is now the temperate regions, existing simultaneously, is without foundation.

It has been noticed that glaciers of great thickness and miles in length and width, move steadily down the sides of lofty mountains. The lower parts of glaciers melt away every summer. The weight of these great masses of ice, moving on the rocks underneath them, grooves the rocks in straight lines. Professor Hitchcock thinks that through the lapse of

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time, the detritus of the mountains, produced by the action of glaciers, air, etc., was carried by the water to the lower levels, and in this way high mountains were reduced in some places nearly to a level country.

Glaciers do not form on mountains less than 3000 feet high, especially in semi-tropical countries. In some cases, mountains are covered to their tops with trees. The snows that fall on them melt away gradually, and the water runs away in clear streams. It is difficult to imagine how such mountains could be leveled by glacial action when no glaciers form on them, and it is consequently difficult to imagine how the detritus from mountains could form the soil which covers the vast pampas of Buenos Ayres, when some of them have an altitude of the height of some mountains.

It is known that there are striated rocks over a large portion of North America and Northern Europe. If these rocks were grooved by mountain glaciers, the whole vast extent of country where these grooved rocks are formed must have been covered with mountains, except the valleys between them. The leveling of these mountains by detrition would cover the valleys to the depth of thousands of feet. Observation shows that most of the grooved rocks are near the surface of the earth. It is observable that glaciers do not form on mountains less than two or three miles above the level of the sea; still, the rocks on the sides of many of these mountains are grooved. It was noticed that there was no known atmospheric condition which would cause the earth to cool off, so as to cause an ice period in one age, and a reversed condition which would warm up the country in the same latitude, so as to make the climate there a temperate one in a subsequent age; hence the glacial hypothesis, as taught by geologists, is without foundation, and was only guessed at to explain the cause of a phenomenon which they did not understand.

HOW THE ROCKS BECAME STRIATED.

If an observing scientist should go to the arctic regions, he would find evidences there that the process of grooving rocks by ice is still going on. Arctic explorers have stated that there are vast fields of ice in these regions which move steadily in straight lines uniformly month after month. They state that icebergs move in the channels, and that they generally follow the same course. It is known that icebergs reach a depth under the water to eight times their height above it, so that an iceberg, having a height of 300 feet above the water, would reach to the depth of 2400 feet below the surface of the water. Such icebergs would groove the rocks at the bottom

of the channel, and the grooving of the metamorphic rocks would be deepest. Some of the icebergs in a particular year would move in an oblique direction to those of the previous years, and hence would make groovings in the rocks that would cross those previously made in a similar oblique direction. During the lapse of time some of these groovings would be covered with deposits from the oceans, and one layer of grooved rocks would be covered by another.

If the bottom of the great bodies of water in the arctic regions, where the water is shallow enough to permit the icebergs to grate on the rocks, could be examined, it would be found to be striated or grooved. Now, all that would be necessary to bring these striated rocks within the reach of human observation, would be a partial revolution of the earth from north to south, so as to bring the arctic circle to a point similar to that now occupied by 35° of north latitude, and the upheaving of the solid portions of such a portion of the arctic regions above the level of the sea. Now, let it be granted, that at some past period the earth made such a partial revolution from north to south, and a reasonable explanation of the cause of the grooving in the rocks can be given.

WHAT CAUSED THE EARTH TO MAKE A PARTIAL REVOLUTION.

It is not enough for quibblers to have proof enough given them to demonstrate that the earth made a partial revolution from south to north in one hemisphere, and from north to south in the opposite hemisphere, but they must know what caused the earth to make such a partial revolution. They are like the men who might not accept the statement that the Pacific is broader than the Atlantic, unless it also was shown them what made the Pacific ocean broader.

I suppose that any scientist would be willing to admit that, if the ice in the antarctic regions should be so increased in bulk and weight as to over-counterpoise the bulk and weight of that part of the torrid zone which is bulged out by the centrifugal force to the rational horizon from a certain point, and the weight of the ice in the arctic regions greatly lessened; that the centrifugal force, caused by the orbital motion of the earth, would cause the antarctic regions to swing around, so as to face the sun similarly to what that part of the torrid zone previously did.

On the hypothesis that before the deluge the great continents of the earth were located south of the equator, just as the larger portion of the continents are now located north of the equator, and the spread of the oceans north of the equator was co-equal to what they are

now south of the equator, it is inferential that the declination of the south pole would be 47° greater from the sun than it is now, and in that case the north pole would incline 47° nearer the sun than it does now. This will be evident by considering both the northern and southern hemispheres of equal weight. In such a case neither pole would incline from the sun. Now, the south pole inclines to the sun $23\frac{1}{2}^\circ$, and the north pole declines $23\frac{1}{2}^\circ$. This declination of the north pole from the sun is in consequence of the greater weight of the northern hemisphere. It has been shown that the centrifugal force acts in proportion to weight. A segment of the earth, delimited from the centre of the earth outward, and bounded by the margin of a continent having its upper limits at the tops of the mountains, is certainly heavier than an equal segment of the earth, delimited from the centre of the earth, of the same configuration, save that its upper limit is at the surface of the ocean. Surely, rocks are heavier than water. The greater portion of the continents are in the northern hemisphere. The centrifugal force, caused by the orbital motion of the earth, acts on the greater weight of matter in the northern hemisphere, and hence, throws it $23\frac{1}{2}^\circ$ farther from the sun than a right angle; hence, the declination of the north pole is due to the centrifugal force produced by the orbital motion of the earth.

If the configuration of the antediluvian continents, and the position of them was such that no currents from the equator flowed to the south pole or north pole, then the accumulations of ice in these regions would be more extensive in area and altitude than at the present frigid regions. It is well known that the rains which fall in certain seasons of the year are not followed by rainbows. The atmospheric conditions of the earth prior to the Noachean deluge may have been such that no rainbows were produced. Now, if in a particular year the thermal condition of the earth should be such that a portion of the icebergs of the previous north pole should move south to a point near the tropics, and the snow and ice in the south frigid zone should accumulate to a vast extent, the south pole would so verge from its former position as to swing around further towards the equator. This condition of the earth would cause the red-hot matter underneath the crust of the earth in the northern hemisphere to surge against it so as to force the crust upward, and thus upheave it above the surface of the ocean, whereby the weight of the northern hemisphere would be increased, and this condition would give the North Pole a continual declination of $23\frac{1}{2}^\circ$ from the sun.

Ice is lighter in proportion to bulk than water, yet the centrifugal force produced by the orbital motion of the earth, as it moves in a great circle, at the rate of a thousand miles a minute, would act on this matter in proportion to weight all the same. Such a vast accumulation of ice and snow in the antarctic regions, which would over-counterpoise that amount of matter at that portion of the equator which makes it more than a sphere there, and which should be estimated from a point at the equator outward to the rational horizon, and then, in a particular month, the removal of a great portion of the ice from the arctic regions, would be sufficient to make a condition which would cause a partial revolution of the earth from south to north, and from north to south. A cataclysm would follow such a partial revolution of the earth sufficient to cause the whole earth to be submerged.

Geologists say that cracks occurring in the crust of the earth cause not only earthquakes, but also tidal waves. The reflow of some of these waves have carried great ships inland to considerable distances, and left them stranded hundreds of feet above sea level. Scientists love to mention these instances. Now, I would like to ask them what would be the effect on the oceanic waters, if the crust of the earth should be rent in a million places, so that the fountains of the deep, which run in great rivers between the fissures of the rocks, should be broken up? Would not a succession of tidal waves be caused thereby which would overflow the continents? That there has been a sudden and vast bending of the crust of the earth is proven by the fractured rocks. The layers are split in a vertical direction. In some instances the rents are spread apart, and the rocks are rent below the frost line. It is not easy to imagine how these layers of rocks could be rent in the manner in which they are found to be rent, except on the hypothesis that the matter underneath the crust of the earth surged against the crust of the earth, and made it undulate like great rolling billows. It has been shown that a partial revolution of the earth from north to south would change the line of action of the centrifugal force, and thereby cause such a surging of the internal matter against the crust of the earth. It was shown that an accumulation of ice in the antarctic regions would cause such a partial revolution of the earth.

I have faith enough to believe that God could cause such an accumulation of ice in the antarctic regions. I know an Atheist does not believe that there is a God, who, in a special way, directs the forces of nature. But

every Atheist must be a Pantheist, although he may not worship Pan Theos, the deity of the Pantheists.

Some of the Atheists believe that there is an inexplicable force which formed everything which exists. It ought to strike these Atheists that that must be an intelligent force. This has not only made the lily of the valley, and the eye of man to behold it, and the mind to be delighted with its beauty, but all the varieties of plants and animals—the latter class to exhale carbonic acid, after utilizing the elements of which it is composed, for the production of animal heat, and the former class to absorb it from the atmosphere for their nourishment and growth—a force that Christians call Almighty, who bespangled the arch of heaven with myriads of stars, who set in motion the planet Jupiter, which is estimated to be 80,000 miles in diameter. Now, when it is considered that this planet moves at the rate of nearly a mile a minute as it revolves in a vast circle of 3,110,000,000 (three billions one hundred and ten millions) of miles,—when it is considered that such a rapid motion is nearly four times faster than a cannon ball can be made to move by any agency employed by man, is it any wonder that the greatest minds are willing to acknowledge this force as the Omniscient and Omnipotent God.

It is not overstretching a scientific exegesis to state that God so directed the elements that the evaporation of water at the torrid and temperate zones should be commensurate with the means necessary to effect the fulfilment of an ultimate purpose, and that He so directed the wind currents that the vapors from the temperate and torrid zones were carried to the antarctic regions and precipitated there, so that in a particular month, and day of a month, there would be such an overpoise of this region, which, through the centrifugal force, would cause it to swing around so as to make it occupy a position at the equator, and by these means bring a flood over the earth.

The present arctic circle is at 67° north latitude, but in the time previous to the general flood the limit of the ice regions doubtless extended many degrees beyond that line. The diameter of the present arctic circle is 3191 miles. The circumference of the ice regions before the flood must have been larger. The ice-grooved rocks extend from the central parts of America to the Ural mountains in Europe, so that even if the crust of the earth which forms the basin of the Atlantic Ocean, was split in different places and spread apart, yet the width of a circle embracing the ice regions must have exceeded the present limit of them.

It is a well-known fact that a body set in motion acquires a certain momentum. A pendulum is made to swing, but at a certain point it stops, and the force of gravity brings it back. If a continued force is not applied, it will oscillate till it stops. The centrifugal force which caused the prepondering mass at the antarctic regions to move northward would continue to act on it until the force was lessened, which would be the case past the equator. The momentum acquired by the moving mass would cease, and then there would be a retrograde movement. The motion of the mass south to north, and from north to south, would ultimately cease, and the central point of the mass would acquire a fixed position on the earth, from the fact that the striated rocks are not found in the present equator. From the fact that their southern limit is in the temperate zone, it is inferable that the previous North Pole stopped at 45° north latitude. I know how difficult it is for the mind of men to conceive a new idea. This is the reason why I have made many repetitions, in order to familiarize the mind of the reader with the idea that the point of the earth, which was the previous north pole before the flood, moved south to the equator; and I have just noticed that, through the momentum acquired, it must have moved past the point that was the former equator, and then back again. It was necessary that the earth should revolve in this way to this extent, in order that the centrifugal force should act suddenly, and with sufficient force to upheave the continents.

Ignatius Donnelly, who wrote a book, in which his theory of the drift, which, as he says, was caused by a comet striking the earth, says that there are no striated rocks in Asia. I have searched geological works, and I cannot find any account of them except in Europe and America. Doubtless there are striated rocks on the sides of lofty mountains in Asia. For it is inferable that the rocks of these mountains are grooved by descending glaciers, but in the vast plateaus of Asia there are no traces of ice-grooved rocks; and this fact is evidence enough of the truth of my theory, that the north pole in some past year moved southward, and contemporaneously the south pole moved northward; and then, as a matter of course, a portion of the tropical zone moved northward, carrying a certain portion of the eastern continent, which was south of the equator, northward, so as to make it occupy a position north of the equator; and then, as a consequence, the tropical land which was north of the equator would be shifted, so as to make it occupy a position underneath the north star. With such a

movement tropical animals and plants would be carried to the new arctic zone, and frozen and imbedded into great masses of ice, while the solid parts of the continent would be drawn by the force of gravity below the surface of a new arctic sea.

After the earth was made, and before it began to rotate, it must have been a sphere, since it is the tendency of gravity to draw matter composing a detached body when it is soft enough to yield to the force of gravity towards a common center. In conformity with this law, little detached and prepared masses of lead which fall through a sieve near the top of a shot tower, are drawn by the force of gravity into little spheres while they are descending to the oil-tank, placed at the bottom of the tower to receive them. If, at any time while they are soft, any portion of a little mass is more elevated than the surrounding parts, the force of gravity will preponderate there, and will pull it down to an evenness with the rest of the surface of the body, whereby it is made round. After the earth was made, the materials of the outer portion of the earth were not as unyielding as the rocks forming the crust is now. After the earth began to rotate, the centrifugal force would give the matter an impulsion towards the equator, but as the rotary motion is from west to east, the matter from both sides of the equator would be impelled in an oblique and easterly direction towards it, making a ridge of land more or less broad, following the equator. According to this idea, the antediluvian continents would extend further from east to west than from north to south, rather than from N.W. to S.E., as America does now. With the exception of islands, the continents would partly encircle the globe. Still, doubtless, there would be an eastern and western continent, for then, as now, there must have been a difference in the weight of different portions of the mass of the earth at its surface, for if there had been no difference in the weight of the mass, the centrifugal force would not have upheaved continents. The water then would have covered the earth to the depth of three miles, although the earth would have been a spheroid. Any scientist can understand this: if there had been no inequality in the weight of the semi-solid matter at the surface, the centrifugal force would have acted evenly on it, making the earth a spheroid, while the liquid water would be evenly spread over the surface.

Holy writ informs us that the progenitors of the human race were naked; inferentially they lived near the equator. But according to the theory expounded in this work, the frigid regions extended further south and north than

they do now, thereby rendering the climate near the equator pleasant and salubrious. The northern portion, the shores of which were washed by the ocean breezes, would be the most pleasant part of the antediluvian continents. It has been noticed in another part of this work, that the greatest spread of waters before the flood, was in the northern hemisphere. There is nothing any more unscientific in the statement that God planted the garden of Eden with fruit trees, than the statement that the laws of nature which God made, plants groves of fruit and nut-bearing trees in the present era. I suppose that any educated clergyman will admit that many words used in the Bible are typical. The word serpent is synonymous with the spirit of evil. A sword symbolizes the idea of destruction. Carbonic acid will destroy animal life. In Java there is a valley where there is a large accumulation of carbonic acid; neither human beings nor beasts can live in it, though plants thrive there. I do not suppose that this place was the site of the garden of Eden, but carbonic acid typified by a sword would guard the tree of life, so that neither Adam nor his posterity could re-enter the garden to eat of the fruit thereof. I need not tell the scientific reader that carbonic acid nourishes plants, and the inhalation of it by animals will kill them.

The early inhabitants widened the limits of their habitations around Eden, and doubtless, to the east and west of it in the former Asia. Now when this portion of the earth was moved, so as to become the arctic regions, the garden of Eden would be carried northward from its general and equatorial position and buried beneath the Arctic Sea, and all the inhabitants of the earth would be drowned and their remains destroyed. All the old continents were buried beneath the broad expanse of oceanic waters. New continents were upheaved, so that no traces of the antediluvian inhabitants can be found in the rocks.

The existence in the sides of mountains of fossilized mollusks of a kind which grow only in the sea, is evidence enough that the continents were upheaved. In order that the centrifugal force could act on the depressed portions which for ages were covered with water, it was necessary that these depressed parts should be placed where the centrifugal force was greatest, viz., at or near the equator. Then as new continents were upheaved, the old ones must have sunken. The upheaving of new continents implies displacement of matter, and no void space could exist near the surface of the earth of the size of continents, as they exist at the present time above the sea level, hence the old continents must have sunk and new ones appeared. There was room for

such a sinkage of the old continents below the water in the immense spread of the oceans, for they cover three-fifths of the surface of the globe. The centrifugal force gives an impulsion to matter, so as to make it follow a line partially in the direction of the rotary motion of the revolving body. In harmony with this law the impulsive force of the yielding matter under the crust of the earth would cause it to surge against the crust in an easterly direction; then as a continent began to form, a partial obstruction would be formed at the western side of the continent, and there the greatest ranges of mountains would be upheaved. A few years ago an article was inserted in the general press referring to submerged continents. In this article it was claimed that the signs of a submerged continent could be traced from the American coast to Asia, and from Europe to America. I did not borrow my original idea of the cause of a general deluge from this source, for I began to think on this subject and the idea of creation over twenty years ago:

It is not an unusual thing for a portion of a community who migrate to a new country to name the new place after the one they had left. Doubtless, the descendants of Noah did this. The old Asia, the principal portion of which was south of the equator, was sunk, and a new Asia, the principal portion of which is north of the equator, was upheaved. The old America was sunk underneath the sea level, and a new America upheaved to the eastward of it. Then the spaces between the continents was made, and the boundaries of the great oceans were fixed. It is easy to imagine that if that portion of the antediluvian Asia, the northern limit of which extended to the Tropic of Cancer, should be moved 65° north, that it would be moved to a point near the north pole, and if moved further in the same direction it would be moved past the pole; then, as a matter of course, the tropical animals which lived in such a section of country, would be carried along with it. The land would sink by the force of gravity, and the animals would float or swim at a certain distance below the surface, where they would be frozen in great masses of ice and thus become incased, and hence would be preserved for thousands of years. It is well known that fish in a frozen state will not rot. On no other hypothesis can the existence of elephants preserved in ice in the Asiatic arctic regions be accounted for. Elephants have been found incased in great masses of ice, such as are formed there every winter, as fresh and well preserved as that of an animal which has been kept frozen for several months from the day it was slaughtered. Now, if the earth gradually turned from south

to north, elephants that died in a northern latitude would be either eaten by carnivorous animals, or they would be destroyed by the maggots or flies in the following summer; but if these huge animals were suddenly carried by a partial revolution of the earth from south to north, and frozen in the intense cold of an arctic winter, and thus become incased in great masses of ice, they would remain preserved as long as the ice masses remained intact. Further to the south, where ice melts every summer, the bones of tropical animals would be found, as they are found in great quantities; for the flesh of their carcasses was destroyed by just the same means by which animals that die in those countries are destroyed at the present period.

TROPICAL ANIMALS OR PLANTS COULD NOT
GROW WHERE THERE IS THREE MONTHS'
ABSENCE OF SUNLIGHT IN THE
YEAR.

The tropical plants and trees found in the arctic regions in northern Siberia seemed to be fossilized by great age. Their existence there is evidence that they grew in a tropical climate. There are a number of imaginary theorists who have advanced the hypothesis that the surface of the earth during a past age, was incandescent, and that in process of time the arctic and antarctic regions cooled off, so that plants similar to those which grew in tropical countries grew there, but their theory has not the shadow of plausible foundation in it. It would seem inferential, if their theory was true, that the section of the earth at the equator not red hot now, was red hot then, like a vast mass of red hot iron. Surely, that portion of the earth where the sun does not shine for three or four months in the year, and where the cold is greatest, should have cooled off first, and then after it had cooled off a soil would be formed and plants begin to grow. Then, as these theorists suppose, some of the plants became highly organized, like sensitive plants. Then, by a gradual evolution, or rather a change in their organical structure, a change inexplicable to them, they believe, or affect to believe, that some of the highly organized plants changed into animals. Of course these plants had to reverse their mode of getting nourishment, though it is difficult to imagine what special force caused such a change in their organical nature. It is known that animals exhale carbonic acid after it has been utilized in them for the production of animal heat. No animal can live in carbonic acid. Animals cannot utilize this substance either for nourishment or for respiration; but plants have an opposite nature. The leaves of plants are organized so as to fit them

for absorbing carbonic acid, and through the action of the sunlight, of separating the carbon (which is one of the component parts of the acid) from the oxygen (which is the other part) the plant retaining the carbon for its nourishment, and eliminating the oxygen, which is again utilized by the animals; so that plants may be known from animals by this difference in their way of getting nourishment. For all that, these imaginary theorists believe that in process of many millions of years, plants were changed into animals, and that the larger animals were evolved from these. They teach the idea that the arctic and antarctic regions became colder, and the zone further south cooled off, so as to become only of tropical heat. Inferentially, the beasts adapted to live only in a tropical climate, must have migrated southward, just as wild geese do every winter to the more genial southern climate; and some of the elephants, being heedless of the approaching winter, might have remained, according to their fantastical hypothesis, and become frozen. I can imagine that these visionary theorists could account for the existence of elephants in the arctic regions on this sort of a guess, but a novice in scientific criticism, with a little reflection, could easily see the absurdity of such a theory. Surely, if the cooling of the earth was so gradual that it required the lapse of centuries to make a perceptible change in the temperature of the arctic region, no animal would remain intact after it was dead until it became frozen. Now, elephants are found where the temperature of the climate varies but little all the year round. It is difficult to imagine how such huge beasts could get the food they require in a section of the world where in winter the sun does not shine for three months in the year, as is the case in the interior of the arctic regions, and this was the case from the time animals first existed on the earth.

REFERENCE TO NEW THEORY OF CREATION.

In my essay on Creation I have shown that the earth was formed so as to be red hot from the center to the crust, and that the crust was added, so that no cooling off process was necessary for the growth and existence of animals or plants, or the existence of men on the earth. I have shown that the cooling off process of the earth and sun is nothing but a pet hobby of those who reasoned from analogy, and that it has no other foundation to rest on than the fancy of those who promulgated or endorsed it. Would it not seem unreasonable for a man to state in one breath, that there was a gradual cooling of the earth, so that it required hundreds of millions of years to reduce the temperature of the earth so that animals could

live on it; and then in the next breath, state that there was a sudden cooling of the country having a tropical climate, whereby such huge beasts as elephants became frozen in great masses of ice.

Learned men get into the learning groove. Learning does not seem to require the use of the inventive faculties. Through desuetude these faculties become too weak to originate new ideas. It is no greater wonder to me that professors of colleges have been unable to explain a cause sufficient to produce even a partial deluge, than that men who have not learned a trade invent things that they cannot make themselves, but which require the skill of a master mechanic to construct. It no more a wonder to me that learned men have failed to find an explanation of the original cause of the light of the stars and the sun, than that thousands of skilled electricians failed to invent a practical electric light until Edison invented it. My essay on the cause of the light of the sun, showing that it is reproductive, is a sufficient explanation of the way that the stars are rendered luminous.

WHY PHILOSOPHERS AND INVENTORS ARE APT TO BE POOR.

Nearly all the greatest inventions of the nineteenth century were made by men who for the greater part of their lives, lived in poverty and obscurity. The reason why men possessing the greatest power to invent or to originate new philosophical ideas are apt to be poor, is that the quality of mind which fits one to invent, unfits him to devote that amount of attention to wealth-making or the attainment of popularity necessary to secure either. Inferentially, the philosopher who fails to gain wealth is not so happy as most other healthy men. His organization is fine; he is sensitive; he must deny himself the comforts of life, while he thinks that the new ideas he promulgates ought to secure him a comfortable living; and because he fails in this he is apt to rail at the selfishness of mankind, whereas mankind has a large element of generosity; but men of lesser intellectual abilities fail to see any reason why they should help those who have the greater intellectual powers, except in the usual business way. Unfortunately for the original philosopher, there are too few who care for philosophical works. Ninety-nine per cent. of the readers of modern books are readers of fiction, and the reading taste of the people in previous centuries was no better. This ought to be regretted by a generous people, for biographical history records many instances of men who lived and died in poverty, yet whose works made the world wiser. The children of the men who lived contemporaneously with those philosophers were benefited,

but they could not repay the benefit, for the philosophers were dead. The people are generous in the patronage they bestow on the man who writes fictitious stories, in which the stronger passions of man are vividly portrayed; and they would be co-equally generous in their patronage of a philosophical author, if they had a co-equal taste for philosophy.

One reason why the invention of machinery has made such immense strides, is because the invention becomes the direct means of wealth-making; whereas the spread of philosophical thoughts improves the mind and indirectly increases its capacity to invent. A knowledge of hydrodynamics aids a man in the invention of water wheels. The study of the philosophy of the laws of motion, the balance and lever, aids a man in the invention of machines.

The inventor of machines not only has a better chance to make money than the original thinker who invents an explanation of some principle in physics or ethics, but he is not apt to be ignored or bitterly opposed through jealousy, or from the fact that the explanation is different from the one taught by the professors of colleges, whereby the poor philosopher must fail in achieving either wealth or fame. The reason of this is easy to understand. A professor has been in the habit of giving a certain explanation. Now, it can hardly be expected that he would like to come before his class and acknowledge that he was mistaken with regard to that particular explanation. It is against a man's ordinary nature to do this; his class may have had an opportunity to study the new idea, and they may be convinced of the accuracy of it. In time the old professor will die, and the student will become the professor, and as he is untrammelled, when he takes his chair, by the expression of any opinion, he will be at liberty to teach the new explanation without embarrassment. Then the new explanation of a question in physics will become popular, while, perhaps, the author of it would be dead, as well as the professor who opposed him.

For a number of generations of doctors and teachers of physiology, the idea was taught that the arteries conveyed air to the various parts of the body, for the reason as they taught, to cool the blood. Dr. Harvey, one man against the learned world, demonstrated that the arteries were for the means of conveying blood from the heart to the extremities of the arteries to be returned to the heart by the veins. It is not surprising to me that one man should make the discovery, for the inventive power, especially as manifested in original thoughts in physical science, is very rare. Hence, it is no wonder to me that thousands of professors, during the lapse of centuries,

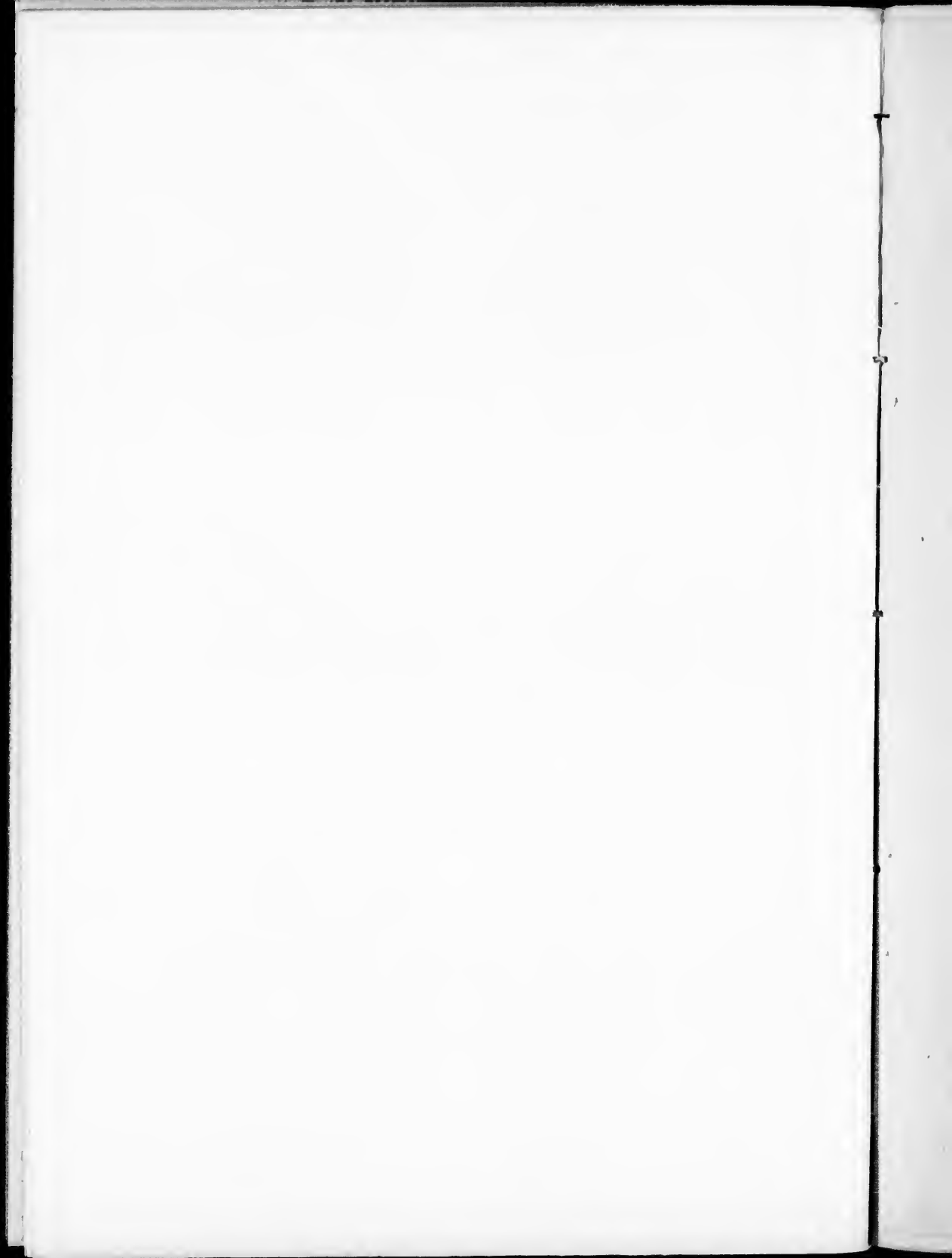
had studied Acoustics, without inventing the telephone or phonograph, and neither of these inventions were made by a college professor. For the reason the professors get into the learning groove, and they stay there.

The unreflecting class are apt to wonder why any man should profess to be able to explain anything a college professor does not know. I do not mean by the use of these words, an idiot, or a man who does not know anything, but a man who seems to be devoid of the power to reflect in a rational way. It is easy for a man endowed with the powers for rational thought to be able to see that every advancement in knowledge must go beyond that which has been learned; so that a man may be great as a learner, and inferior in power to add to the great stock of knowledge that Europe and America possess to-day, a stock of knowledge which makes either of these continents surpass Africa in all the luxuries of civilization and the means of enjoyment, viz., comfortable and elegant dwellings, fine clothing, railroads, telegraphs, telephones, etc. A portion of the native born people of Africa have these things, because they have a share in the general diffusion of knowledge.

After a consideration of the foregoing remarks, it ought not to be considered surprising that college professors have hitherto failed to hit on the idea that a partial revolution of the earth in one year, from north to south, and from south to north on the opposite side, so as to carry a portion of the tropical regions northward to the position previously occupied by the arctic circle, would be the very means necessary to carry the tropical animals and plants there, so that they would be found in that place on the earth which we call the Frigid Zone. The objectors to this theory are those whose lofty superciliousness and innate skepticism makes them regard Moses as a fanatic, who borrowed most of his ideas from the ancient Egyptian mythology, and who had no authentic tradition of a general deluge. These skeptical objectors hate to admit that there was such a partial revolution of the earth which carried the previous poles of the earth to certain positions at a new equator, because such an admission carries with it proofs of a general deluge.

THE SERMON OF THE ROCKS.

It has been stated that high up on the mountain sides are rocks which contain fossils of mollusks, of a kind which grow only in the sea. If mountains were formed by volcanic eruptions, these shells would not be found in the rocks. It can hardly be imagined that any geologist would be so foolish as to state that mollusks, such as oysters and sea clams



the waters. If the centre of the North American continent was sunk six and a-half miles, and radiating from such a point the whole continent should sink according to the above ratio clear to the coast, would it not be certain that a flood from the oceans would flow over the whole continent, just as islands, which have been known to sink, are then covered with water.

PROOFS THAT THE POSITION OF THE POLES
WAS SHIFTED, WHEREBY A DELUGE
WAS CAUSED.

The existence of striated rocks in one-half of the northern hemisphere—rocks which must have been grooved by ice formed in an arctic climate—rocks which must have been covered with water for many centuries,—this fact taken in connection with the fact of the existence of animals and plants which only grow in a tropical country, remains of which are found in the arctic regions in the opposite half of the northern hemisphere, is proof sufficient that the earth at some past year made a partial revolution from north to south, and from south to north on the opposite side, whereby the old continents were sunk beneath the surface of oceans. The peculiarities of the drift prove a general deluge. Not only the arrangement of the drift, with its deposit of clay in one place, but of what was submerged sand-bars in another, and their extensive and level deposits of gravel, covered in places with clay, and in others with sand, while in others the deposits of gravel were accumulated into hills, and these hills in places covered with clay or sand.

The existence of logs, at from scores to hundreds of feet below the surface of the ground. The existence of the bones of mastodons deep below the surface, are evidences that there was a sudden and great change in the drift of the earth. These and many other phenomena are proof that a deluge covered the whole earth, and that new continents were upheaved.

COAL FIELDS FORMED DURING THE DELUGE.

There is one more fact which, in itself, is sufficient to prove the hypothesis of a general deluge. On no other reasonable hypothesis can the formation of coal-fields be explained. A preacher, whose name I have forgotten, who had read a number of works on geology, held the idea that the coal-fields were formed of leaves of trees which fell into the streams, and which were carried down the streams to their mouths, where they accumulated, and subsequently were changed into beds of coal. He did not believe in a general deluge, because he had read the works of men who were professors in colleges, and who had endeavored to controvert the idea that it was

possible for a deluge to exist over the whole face of the terrestrial globe at the same time. Surely, if the said preacher had reflected a little for himself, instead of accepting the unproved hypotheses of great names, he could have seen how unreasonable, how wanting in harmony with observation the hypothesis is, that the leaves which floated down the streams in past ages could have formed the coal-fields as they exist to-day.

Observation shows that but few of the leaves which fall into streams ever reach the mouths of them intact. Scarcely any traces of leaves which fall into streams are found in the following summer. They are so subject to decay that they rot in less than a year. But it is supposable that some of the leaves are carried by the flowing streams to their confluences with other streams, or to lakes where they empty. Yet how could coal fields be formed of the thickness in which they are known to exist, with such a little proportion of sand and clay, as is found in coal? And then it is difficult to imagine how a deposit of leaves sufficient to make a seam of coal, five or six feet thick, and a score of miles in length, and miles in breadth, could be formed at the mouths of rivers having a width of less than a quarter of a mile, and then covered with hundreds of feet of different kinds of rocks; and then after another lapse of time there could be another deposit of leaves, and another deposit of rock. Is it not strange that men who have made great books on geology, did not take into consideration the fact that but few great rivers enter the sea having rapids or waterfalls at their mouths, and still fewer streams having falls at their confluences? Yet a little reflection would convince an ordinary thinker that a deposit of leaves sufficient when pressed into coal to make a seam six or ten feet thick, and then afterwards covered up with a deposit of sand several hundreds of feet thick, would make a dam which would deflect any river from its course, so that no second deposit could be formed on the top of a first one. But in the coal measures as many as twenty-three different layers of coal are found situated above each other, though separated by strata of different kinds of rock. Then, again, it is difficult to imagine how the detritus, which is carried by drainage in the streams, and which forms the alluvial deposits, should be very different from time to time, so as to furnish materials for the formation of shale at one time, and indurated rock at another time; then sand rock, which covers the beds of coal in some places to hundreds of feet, and in others to the thickness of thousands of feet. Then, again, it is difficult to imagine how the source of the detritus on a particular stream should be changed, so as to yield sand at one time

and clay at another. The quantity might be increased in case of a flood, but the detritus that would be washed into a certain stream at one time would be similar to the detritus that would be washed into it on a previous time; hence it is impossible, according to any known observations, to conceive how any deposit of leaves that might possibly accumulate at the mouths of streams could be covered, as coal fields are known to be covered, with different layers of rocks. But there is still another fact in opposition to the theory, that coal fields were formed by the accumulation of leaves in the streams or at the mouths of them; and this fact is, that heat is necessary to transform vegetable fibre into coal. The temperature at the mouths of the streams which would permit trees to grow, would not be sufficient to transform trees and leaves into solid blocks of coal.

According to some other geologists, who have a great deal more of fanciful imagination than ability for philosophical thought, have advanced the idea that peat, through the lapse of many ages, has been changed into coal beds. These geol. sts reason from analogy, and not from deductions. Comparisons may be used for illustration, but the conclusions drawn from them are frequently incorrect. For centuries the peat from the bogs in Ireland and other countries has been used for fuel. A great observer and analogical reasoner is asked to explain the origin of coal fields. He begins to reason from his observations analogically in this way:—Peat burns with a slow, steady flame. Soft coal and charcoal burn in a similar way. Charcoal is made of wood. All these substances contain nearly the same elements. Peat bogs have the constituent elements of vegetables. They are scattered here and there over the earth. The coal measures are similarly distributed. *Inference*:—The coal measures were originally peat bogs. This inference seems plausible enough. But the theory of the formation of coal measures, through the conversion of peat into anthracite and bituminous coal, has no grounds except pure imagination. True, it is an explanation, though it is just such an explanation that a boy who has a knowledge of science might fancy. Hugh Miller, who it seems was more of an observer than a deductive philosopher, gives descriptions of the flora which formed the coal measures. I mention the name of Hugh Miller with pleasure, for he was one of the self-made men who, enriched the world with the books he made. This remarkable man gave the most minute descriptions of various sorts of leaves and trees found in blocks of coal.

Surely the outlines of the leaves of plants found in the flakes of coal he examined must have been somewhat distinct, or he could not have described them. Now, as but few or no traces of the outline of distinct and intact leaves can be found in peat, and as the accumulations could not, from natural causes, become covered with various formations of stratified rocks, even if it could not be shown that on no other hypothesis coal fields could be formed, it is not evident that coal fields were formed by the conversion of peat into coal.

Peat bogs are formed at the surface of the earth, while coal beds are buried underneath thick layers of rocks. The question is pertinent to the consideration of the theory of coal formations: How did the great layers of sand rock, in some places a thousand feet thick, become deposited on peat bogs? Peat bogs do not appear to have been formed by rivers running into them. There are ten of these peat bogs, or muskegs, as they are termed in the North-West, to a single streamlet in this country, and then muskegs are found near the heights of land. It is as difficult to imagine how sand could be carried up grade by streams to cover said bogs, as to imagine how in the northern part of the north temperate zone there would be heat enough to change such peat into coal, after the country had become cool enough for plants to grow.

But the geologists say that the earth was once red hot throughout, and it had to cool off; and after it cooled off, then the plants grew. Surely these geologists ought to know that plants grow above ground, their roots, not their leaves, penetrating beneath it. Now, if as they might suppose the trees and plants grew most luxuriantly, it is inferential that the leaves of deciduous trees, and the trunks of dead trees, would fall to the ground; but it is known that insects bore holes in dead trees, by means of which their destruction is hastened. Ere an amount of vegetable matter could form, through the falling of leaves and trees, to form a layer of coal an inch thick, all the trees and leaves would rot and be converted into vegetable mould. It is certainly very evident that coal fields could not be formed in this way, besides it would puzzle the ablest geologist in the world to show how this vegetable matter could be covered up in such a country as England to the depth the coal fields there are known to be covered.

THE WAY THE COAL MEASURES WERE FORMED.

It has been shown in this work that a general flood was caused through the sinkage of the continents and islands which composed

the earth previous to it, and that new continents were upheaved, and that this cataclysm was caused by a change in the position of the points of the earth which were the previous poles, so that they became depressed points at the equator, and that the centrifugal force then acted on the depressed parts, which were covered with water, and upheaved them. Such a cataclysm would result from this depression and upheaval of continents, and would cause the uprooting of nearly all the trees which, at that time, covered the greater part of the earth. The rushing of the waters northward, meeting currents moving southward, would cause the trees to jam and interlace. The coal fields give evidence of a vast accumulation of ferns, some of great size. Ferns of similar size grow in the present age in some of the tropical parts of the earth. The coal fields contain the fossils of many other kinds of leaves. Heavy kinds of wood, such as lignum-vite, mahogany, &c., would sink to a great depth. Other kinds of hardwood, such as oak, maple, &c., would swim at a less distance below the surface; and the lighter kinds of wood, such as pine, cedar, &c., would swim for a time at the surface of the water. Observation proves that even these kinds of wood will sink after they become water-soaked.

It is thought that the pressure of the water above a certain point on the water below it, will render the latter so dense, that certain substances a little heavier than water, at the surface, will not sink to the bottom where the water is over eight miles deep; hence, it is inferable that the heavier kinds of trees which were at the time of the flood swimming in the ocean, did not sink to the bottom where the water was over ten miles deep. Then, again, the heaviest trees would have to become water-soaked before they sank to the lowest point possible for them to sink. It has been stated that these trees would accumulate in great jams, through the action of the counter currents, and it is reasonable to conclude that some of these jams would be many miles long, and broad, and of great thickness. The leaves swimming in the flood would be drawn through interstices in the jams, and fill them. These leaves would be arranged in every possible angle, just as they are found in coal. A little sand and clay would be intermixed with the leaves, and the whole would become an impacted mass which would move to and fro according to the flowage of the under currents.

The number and magnitude of these accumulations of leaves and trees must have been in proportion to the forest growth of the antediluvian era and the sparseness of the population. The observations of geologists show

that the growth of the flora in primitive ages was on a scale immensely greater than the growth of the flora of the temperate regions of the present era, and nearly all of this luxuriant vegetation was gathered in vast masses, to be converted subsequently into coal; for the whole earth was deluged. "The fountains of the great deep were broken up"; the waters rushed to and fro with a force as irresistible as that exerted by a cyclone, or even the most tempestuous waves of the sea. I have heard sailors state that waves have struck ships with such force as to rip portions of the gunwale from their strong fastenings. The force of the currents would drive the swimming trees so as to bring the trunks of trees close together, making tiers of trees, so that thousands would be piled on each other. The tops of trees would interlace, their limbs bent and twisted into inextricable masses like tangled nets, and the leaves of trees would fill all the spaces. The flood lasted nearly a year, so there was time enough for all the trees and a vast proportion of the leaves to be gathered in immense masses. It is the tendency of water to flow to the lower levels, and as water would carry with it the huge masses of impacted trees, they would sink into various depressions; but most of these depressions ultimately became elevated above the level of the sea.

It may not seem proper to speak of all the water which formed the general flood as a number of waters, but the plural form of the word is in harmony with my idea. A lake or certain current of water contains the idea of a single body of water. At the time of the flood, the various bodies of water were merged into one vast body which surrounded the whole earth, yet it consisted of vast numbers of distinct currents.

It has been shown that when the previous poles and surrounding parts were swung around, so as to occupy positions at what became a new equator, that two points on said equator would be each of them depressed thirteen miles, and that the depressions would be gradually less from each of the said points outward to the rational horizon from them. Then, as water seeks the lower level, it would rush to these depressed points from the north, south, east and west. The flowage to these parts would continue until the equatorial diameter of the earth again became equal, or nearly so, all around it. Water is a liquid, and it readily and easily yields to the force exerted on it. The centrifugal force would give the waters a great impulsion to the depressed parts. The flowage would be very rapid, and it would carry the debris and detritus along with it. But new continents

must be upheaved extending from the equator north and, south of it, and, because of the partial solidity of the earth, this upheaval would require a much longer time than the movement of the water necessary to reform the earth into a spheroid, having the bulged-out portion at the equator.

THE STRIATED ROCKS WERE ONCE COVERED
BY THE ARCTIC OCEAN, BUT
THEY WERE UPHEAVED.

From the fact that the striated rocks are formed in Western Europe and Eastern America; from the fact that the coal measures are found widely scattered, not only in the continental portions of the eastern and western hemispheres, and principally in the northern portion of them, the inference is reasonable that it was the principal portions of the depressed parts that were upheaved. It has been stated that the tendency of water is to flow toward the lower level; then the water from the surrounding parts would flow towards the depressed parts, and as a sequence it would carry in its currents the immense masses of impacted trees and leaves. At the time of the flood there were two points at the equator, each of which was depressed thirteen miles, though the depression was gradually less and less radiating from said points. The water which rushed towards these depressed points carried with them the material for the coal formations, which has been described, contemporaneously with the flowage of the waters to the depressed parts. The centrifugal force began to act on the solid matter below the water so as to upheave it gradually.

DEPTH OF THE WATER IN SOME PLACES
AT THE FLOOD.

Previous to the deluge, doubtless, the depth of the arctic and antarctic ocean was from three to five miles at certain distances from the shores. When these regions were shifted in position so as to be once every day directly under the sun, the surrounding waters would suddenly rush to these places and round up the waters there so as to bring the shape of the earth in harmony with the previous equator. Now although the matter below the crust of the earth is red hot and yielding, yet compression would render it so dense that a certain amount of time would be necessary to upheave a continent above the level of the sea, but the centrifugal force acting on matter in proportion to density would upheave the new earth. It ought to be evident to the reflective reader that a force which in the first instance caused the spheroidness of the earth would in a second instance, when acting in a similar way, upheave new continents; but before they were raised above the surface of the ocean, there was a time at the flood

when the water was from fifteen to eighteen miles deep over them. This is not difficult to understand. When the poles were shifted they were depressed thirteen miles, more than two other points midway between them. Water quickly rushed to the depressed parts and filled them up so that the water there would be eighteen miles deep in places. Doubtless some of the heaviest kinds of weeds would sink nearly to the bottom of these great depths. Water in the ocean like air above it becomes almost quiet; then, anon, when acted on by certain causes, it moves with violence. Precipitation in water takes place when the water is in a comparative state of rest, then fine sand and clay will sink to the bottom. If the water contains infusoria, these would descend along with the sand and clay. The force necessary to upheave the continents would produce a great heat, sufficient to transform the vegetable materials into coal, but this heat would be developed gradually as the upheaving was gradual. The infusoria entrapped with the precipitation of argillaceous materials would work their way upwards and form films before the argillaceous materials hardened. The rapidity with which the materials for the formation of shale accumulated, might be inferred from the precipitation of snow on a calm day, when a foot in depth is precipitated, and twice that quantity is precipitated in some instances. In the case of the deposit of clay and sand, the precipitation would be several times greater than the precipitation of snow, for the swift flowing currents, before they came to a state of rest, would uplift from what was the previous earth, all the clay and sand which covered the rocks, so that the waters of the ocean would be turbid with these substances. Geological writers have stated that clay and sand has been carried thousands of miles by oceanic currents. Then what must have been the case when the waters swept over the sinking continents with a velocity producing a force equaling that of a cyclone; and then the waters must have swayed and twirled as they rushed through the antediluvian mountains, tearing trees from their ground-holds, as well as the friable earth from its lodgment.

A consideration of the state of the waters at the general flood will make it easy to understand how the coal fields were covered with various deposits. First was a deposit of clay, then a great mass of trees formed lodgment on the surface of the rising continent, which would not be apt to take place unless the water was quiet, for if the water was in motion the mass of trees being about the density of water, would be carried along with the current. But the mass of trees impacted with leaves, having become placed on the surface of the

rising continent, a precipitation of materials for shale would take place. For days, perhaps, in the vast quiet deep, the shower of clay and sand would continue. Now the upheaving earth causes a change of currents, the deposit of materials for shale ceases, and water containing sand flows over the mound made by the placement of the mass of trees and deposit of shale.

Whenever an obstruction exists in a current, the water is made to swirl around it, and if the current carries sand, it will be deposited in mounds on each side, and the end of the mound opposite the direction of the current. These mounds would be more or less elevated, and hence they would deflect the current flowing towards them, so that in time the mass of trees, lodged as described, would be surrounded by great mounds of sand until a depression would be formed above the coal formation, which would then draw the current downward and impede it. Then the mass of trees, which will be termed coal formations, would receive a deposit of sand to the depth of hundreds of feet in some instances, and a score of feet in others. I have read of water-spouts which have burst in portions of the Western States, which made floods which have covered the fields through which the flooded stream ran, to the depth of two and three feet. Now, let the reader fancy an ocean current carrying ten times more sand than was in the stream made by the water-spout, and lasting for a week, and during that time not only making a continuous deposit adjacent to the coal formation, but also above it. Then a partial conception can be made of the quantity of sand that would be precipitated around and above the coal formation.

But the current changes, and another flows over the coal formation, and with it another mass of impacted trees. As there is another basin above the first formation, the second coal formation is drawn above the first and lodged on it, and why? Why, simply, one end of the impacted trees strikes a great sand mound that had been formed as described, and is thus stopped. Not only by the rising of the bottom of the ocean to form a new continent, but because the mass of trees now stopped would have a tendency to sink. The second coal formation would be lodged above the other.

Feathers and dust are heavier than air, but when the air is put in rapid motion these substances are carried along and do not sink to the earth until the air becomes quiet. At the time of the flood, as now, the water in places would be in a comparative state of rest. In any part of the rapidly moving water, masses of trees and leaves slightly heavier than water, would not sink, nor would the very fine par-

ticles of clay and sand sink, but when the water in which they existed became somewhat quiet, they would sink to the bottom. In consequence of the greater weight of the larger particles of sand, quite a strong current of water is necessary to make it move from place to place.

I have seen a bay which was made turbid by tumultuous waves rushing into it, which stirred up the muddy clay mould which had lain on the bottom. I have noticed that a day, or even more of still weather, was necessary to permit the mud to sink to the bottom. A consideration of these facts will make it easy to understand why the materials for shale were deposited at one time, and sand at another, and the materials for indurated rock at another time. Again, if two currents moving in opposite directions meet, they will suddenly deposit the sand carried in the currents sufficient to form a layer. All that would be necessary to make a separation between such a layer and a subsequent one would be a precipitation of clay. The ebb and flow of the tides twice a day for a month would make sixty of such layers, provided that when the tide ebbed a counter current should cause a precipitation of sand. No scientist need be told that the tides continued to ebb and flow during the general flood, or the earth continued to rotate, and the moon to exert her attractive influence. From the fact that the primordial rocks are composed mainly of sand, it is inferential that the quantity of particles of sand swimming in the waters of the flood was greater than all other materials in the water.

There was time enough during the Noachean deluge for all the deposits found above the coal measures.

At the time of the flood, the sand which now constitutes the solid sand rocks, doubtless was softer than it is now. Some of the sand rocks which are quarried in the present era are quite soft until they are exposed for some time to the action of the air. In the centuries following just after the flood some of the limestone formations may have been as soft as chalk, which is a carbonate of lime, so that great rivers would cut extensive and deep channels through them in a few centuries, whereby those who do not hesitate to wrest the Scripture from its true meaning, in order to make it harmonize with their dogmas, have been led to conclude that it required the lapse of hundreds of thousands of years for some rivers to cut the channels through which they run.

I have before observed that the present continents were the depressed parts of the solid parts of the earth before they were upheaved, and that the depressions were dished from the outer edges of them, or rather from

the centre of each of them out to the rational horizon, so that the first deposit of the coal formation would be in the depressed parts; and it has just been shown that after a lodgment of a coal formation, it would be surrounded by vast deposits of sand.

On the coast of some bodies of water there are sand hills and sand beaches high above the level of the bodies of water. In some instances the sand hills are high above the adjacent country. On this data it is easy to see how, that a coal formation, causing a deflected current of water, carrying a vast amount of sand, would form a deposit all around such a coal formation, whereby the location of the coal formation would be dishd. Now, such a depression in the bottom of the rising continent would cause a suction of the water flowing over it, whereby another mass of trees swimming over it would be drawn to the place and lodged there, to be covered in the same way, and with the same kind of materials which covered the first deposit, though a change of currents might make the arrangement of detritus different. Again, the accumulation of trees would be greater in one part of the flood than in another, but they would be found in both hemispheres, because the waters flowed to both of the depressed parts which were upheaved. During the deposit of the drifts and coal formations the continents would be slowly rising at the rate of from one to two miles a month, for some portions of the continent would have to be upheaved twenty-three miles, and other parts to a less distance. It was shown that the most depressed portion was about eighteen miles deep, and some of the mountains are five miles high; and eighteen plus five are twenty-three; but the upheaving would be at a certain ratio, according to depression and the weight of the matter to be upheaved.

It has been shown that the centrifugal force upheaves matter according to density, therefore it does not follow that the highest part of a continent should be in the centre of it. It is necessary also to consider, not only, that the continents were upheaved, but also the bottom of the ocean in each hemisphere, and the water in the ocean must have been bulged out to a certain degree. This idea has been repeatedly explained in previous pages. One of the depressed parts upheaved being in the eastern hemisphere, and the other in the western hemisphere; but both parts were upheaved into continents.

On the hypothesis that there is a difference in the density of water at various depths, it is reasonable that the lighter kinds of wood, such as pine and cedar, would not sink so deep as oak or maple. The heaviest kinds of wood, such as mahogany or lignum-vite, would sink

to the greatest depths, and these sorts of wood would form the deep layers of anthracite coal, the combustion of which is so pleasing to aristocratic persons while it is being consumed in the artistic base-burning stoves.

As the pressure on these lower formations would be greatest, the heat formed by the gradual condensation of the mass and its closer proximity to the heated matter under the crust would convert the mass of trees and leaves into pulp. The enormous pressure that would be exerted on the mass to upheave it would convert it into a compact solid. The lighter kinds of wood which swam at a less depth than the harder kinds of wood would not find lodgment until the continent was upheaved, so that the waters above it would not be over four or five miles deep. Clay sinks last in agitated waters. Some of the higher deposits of coal would be covered only with argillaceous substances, but these coals would be quite soft, and the shale which might cover them would be filled with the remains of infusoria, and very minute mollusks, so that after the hardened shale was exposed to the action of air it would crumble to dust; just as the bones of animals are known to do after they have been buried for many years.

Doubtless, there were pitch-pine trees in the antediluvian ages, just as there are pine trees in the postdiluvian time. The leaves of these trees are not deciduous. Fish love to gather around islands where the water is not deep; but at the time of the flood there were no islands, so, inferentially, various sorts of fish gathered into the recesses of the masses of pitch-pine trees, which swam to a slight distance below the surface, before the interstices of them became filled with other leaves.

Last summer, at a place called Burnt River, Ont., I was watching lumbermen driving pine logs in the stream, or rather an artificial channel, from the lake to the saw-mill. Every now and then some one of the men would spear a dog fish with his pike. It seemed that these fish in large numbers had taken a liking to the cover which these logs had made. I was doubly pleased to see the men kill these fish, for two reasons. First, it pleased me to see the men pleased. I had found that the men who worked at this mill were not only the most intelligent mill-men I had met with, but they were a jolly set of good-natured fellows as well; and then the fish they killed were not only regarded as unfit for food, but they preyed on edible sorts of fish.

Doubtless, eels in vast numbers found resting-place in the pitch-pine recesses of trees, which they would do for this reason, viz., to eat the little fish that would seek the protection that the limbs of the trees afforded them. Now, it is not difficult to imagine, that a mass of

pitch-pine trees, the interstices of which were to a great extent filled with oily fish, would be the very thing when incased between two layers of rocks and heated so as to reduce the whole mass to a pulp, and then pressed so as to make the tar and oil to pass further on in the fissure or to another fissure to make a reservoir of bituminous oil. Then, again, a certain amount of heat in another formation would change the substance into gas, and the gas would either escape or rise into fissures that were air-tight, there to remain until the fissure was pierced with a drill.

I could write a large volume in further exemplification of this theory, but I think I have sufficiently explained it so that the scholar will get a clear conception of my explanation of the formation of the coal measures, and the formation of coal oil. Now let the scientific reader compare it with the explanations of the formation of coal fields given by geologists. Some of these worthies write books filled with Greek words anglicised, and which the ordinary reader does not understand, though they help to impress the mind of the unscientific reader with what he thinks is evidence of their great insight into things. According to these geologists, the coal measures were originally peat bogs, and became changed into coal. The deeper and older bogs became anthracite coal, and the newer and less deep ones became bituminous coal; just as though there was any difference in the age of the world at the surface and the age of it at a depth of one thousand feet. Now, it is as difficult to imagine why a peat bog had any more effect in making a difference in coal than it is to imagine how peat, which contains but little or no traces of leaves, could be changed into coal, having the appearance of intact leaves, though changed into coal.

My theory of the formation of the coal measures carries with it sufficient evidence in itself of the general flood which covered the whole face of the terrestrial globe.

In a previous part of this work it was explained that the southern hemisphere was heavier than the northern hemisphere, and that in a particular year it was rendered still heavier, and in that year a great portion of ice in the arctic regions was loosened and floated southward. Then it was shown that the centrifugal force acting on the antarctic regions in an inverse ratio, would cause them to swing around to the equator. It was also shown that the force which would cause the poles to swing around to the equator, would also cause an oscillating motion of them. Then it was shown that the incandescent matter under the crust of the earth, would surge against that portion which now com-

poses the northern hemisphere, and would upheave it, so that the larger continents are now found in it. Now, as a sequence, the northern hemisphere became the heavier; then the centrifugal force, caused by the orbital motion of the earth, would force the new north pole further away from the sun, so as to make it stand at an angle of $23\frac{1}{2}^{\circ}$ from the sun. It was shown that as the striated or grooved rocks are found in the eastern and northern part of North America, and in Europe from 43° north latitude, northward, that the antediluvian point of the earth, which was then the north pole, moved south and settled at a point in the North Atlantic ocean. And it was also shown that the upheaval of the continents must have caused the crust of the earth to split and spread in places from east to west, because the surging of the internal matter against the crust of the earth, would give the matter an impulsion in that direction. It was shown that it was reasonable to conclude that the basin which now forms the bottom of the Atlantic ocean was spread, since the distance from the eastern limit of the striated rocks in Europe to the western limit of them in America, was further than the limit of the antediluvian frigid zone. It was shown that the continent up to the tops of the mountains contains the fossil remains of sea mollusks and fish, and that the drift of the continents contains in it at various depths the bones of huge and smaller land animals, timber and sand, and gravel beaches; and these facts were evidences that these continents were covered with water for long ages. And it was also shown that the upheaval of these continents must have been contemporaneous with the sinkage of land of co-equal elevation. It was shown that the coal fields must have been formed during a flood, and that this flood was caused by the partial revolution of the earth from south to north on one side, and from north to south on the other side. It was shown that this partial revolution was not gradual, since the remains of tropical animals are found intact in immense icebergs north of Siberia. Nor would a gradual turning of the earth from south to north account for the immense boulders that seem to have been carried by ice to high elevations and deposited there, for if the turning of the north pole southwards had been gradual, the icebergs (which are known to carry immense boulders) would have struck against the coasts, and would have melted there. Then, again, that neither the eocene, miocene, or pliocene strata of rocks contain the fossil remains of human beings, for the sufficient reason that these beings mainly subsist on land, as doubtless the great majority of them did in the antediluvian eras; but fish and shells lived in

the sea and became entrapped in the materials for the formation of the different strata of rocks, and these rocks were upheaved, and the old or antediluvian rocks and continents were sunk under certain portions of the spread of water which even now covers three-fifths of the surface of the earth.

This chain of evidences of a general flood is unbroken, hence the conclusion is inevitable, that a flood, corresponding with the account given in the 7th chapter of Genesis, covered the whole earth.

Herbert Spencer says, "that it is impossible for man to think of the whole earth at the same time." Let the reader try to think of several places at once, and he will have some idea of the difficult task the author of this essay has had. If some critical grammarian finds a misplaced word, let him reflect how difficult the task of writing the explanations given in this work are, and grammatical accuracy in composition at the same time. Only a moiety of the work was copied; and even in that portion I have had to think more of the subject than the grammar.

The author of this work does not wish to animadvert upon those clergymen who have accepted the theory of a partial deluge. It ought not to be surprising to any one that students should accept the ideas taught by their professors in the colleges they attended; yet, to my mind, the idea of a partial deluge seems unreasonable. Surely, a flood which would be sufficient to cover any chain of mountains, would have to be high enough to cover all the various chains of mountains, for water must approximate to a level. The idea of a partial deluge doubtless arose from the fact that the air could not contain water enough, when precipitated by forty days' rain, to make a general flood; but the Bible account not only mentions the rain, but also the breaking up of the fountains of the deep, which, doubtless, was caused by the sinkage of the old continents, and the upheaval of new continents, whereby the strata of rocks were fractured in zigzag, yet nearly perpendicular lines. Another objection to the idea of a general deluge is the supposition that the ark was not large enough to hold a pair of every kind of carnivorous animals, and seven pairs of graminivorous ones; but did these objectors ever stop to think that the varieties of animals before the flood might not have been as numerous as they are in the present era?

It may not be possible for a species to produce a mixed breed with another species; but observation proves that a species can, through a change of climate, food, &c., become a number of varieties. The varieties of dogs are almost indescribable; yet it is probable that the canine varieties had their origin in the

genus *Canis*, or wild wolf. The bovine species has many varieties, but all of them may have had their origin in the bovine genus *Bos bubalus*. The genus *Cervus* has many varieties, such as the fallow-deer, whapite moose; but they may have had their origin in one or two species. The same law may hold true with the different varieties of the feline species. A species may, through climatic changes and other causes, become several varieties; but birds cannot change into monkeys, and then monkeys into men.

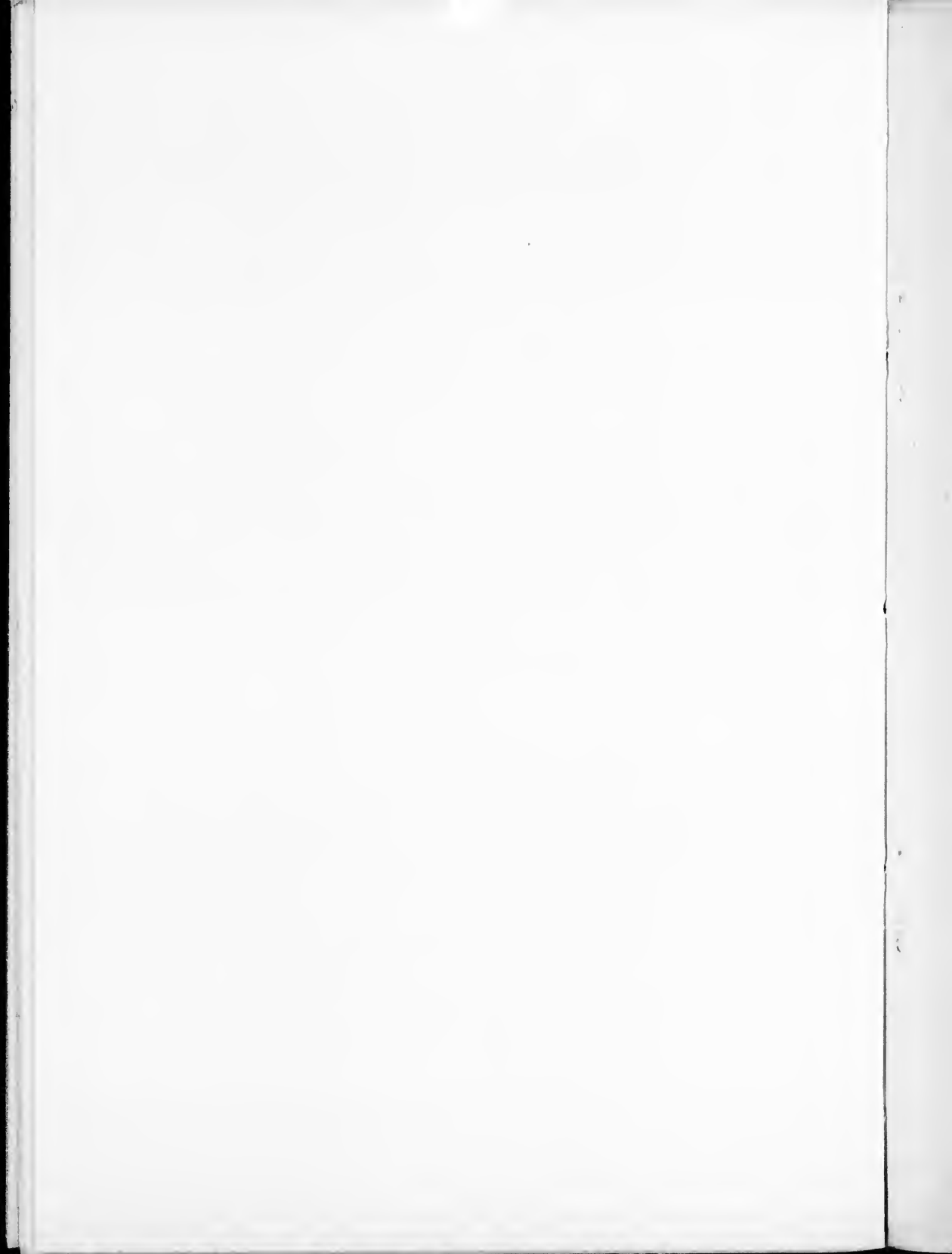
According to the hypothesis that a species may become divided into a number of varieties, the Noachean ark was large enough to hold all the animals that could not live outside of it during the flood. Again, some atheists object to my theory of a general deluge, on the ground that every living creature that breathed would be destroyed, and the saving of animals by means of an Ark is unscientific. But, surely, if animals could be evolved from plants before the flood, they could be evolved in the same way after the flood. Others say that the flood could not have been general, because there are some animals in Australia not found in other countries. But did these cavilers never read about certain kinds of animals that have become extinct. How do they know that no kangaroos ever existed in Europe or America? Oh, says the learned geologist, we have not found the bones of the kangaroo in the drift of America. Now, it is known that there are moose, and what are termed elk in America, and they shed their horns annually; yet it is rarely that a pair of horns of these beasts are found. It is said that mice eat them. Now, would it not be quite possible that the bones of the kangaroo might be entirely destroyed, so that no traces of them could be found in America. Geologists speak eloquently about the connection of continents by strips of land that possibly existed between them in past diluvian ages. But the moment anyone hints that possibly both beasts and creeping things, and even human beings, may have used these isthmuses for the purpose of migration, their eyes brighten with indignation, as they scout the idea. They fear that the admission of such an idea might endanger some of their pet theories.

Just before the continents emerged from the waters which covered the whole face of the earth there must have been an unusual quietness of the air. Every meteorologist knows that winds are set in motion through uneven temperatures of the atmosphere. In the vast expanse of the continents the air becomes unusually heated. In extensive valleys facing the sun, such as the Mississippi Valley, the air on certain days becomes unusually

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warm, and this condition is increased during several days of cloudless and calm weather. The rays of the sun striking the land evolves heat which, when not carried away horizontally, is continually increased. The heated and rare air rises towards the mountains until a cold strata of air is reached, and this air, being of greater pressure, forces its way to the space occupied by the air below. Every oarsman has noticed the little whirlpools which follow the displaced water made by a stroke of his blade. When a lighter volume of air gives way to a heavier current, there is a displacement, not of the whole volume of air, but part of it. The rushing of the cold air towards the highly-heated and rare air of the valley may take a circular motion, and thence form a whirlwind; and this motion may develop a current of electricity which will accelerate it. The cyclone will shoot through the valley like an arrow, though it may be deflected in some instances by certain elevations, but the general course will be in the line of the air made rare by heat or displacement. I have made meteorology a study for several years. These remarks on the subject are too brief to give a clear idea of the cause of winds, cold and mild seasons, &c. If this work meets the sale which I hope it will, I will write an essay on the subject, and publish it, so that the people may be able to form a forecast of the weather, and thus be on their guard.

Although it is somewhat aside from the main subject of this essay to refer to the cause of wind currents, yet I have done so, in order to show that, just prior to the emergence of the continents above the level of the waters which formed the deluge, there was an unusual calm over the earth, then enveloped with water. A little reflection will convince a man of good understanding that, after the flood had been on the earth, the temperature of the air would be more uniform than the temperature of the air of the Pacific ocean. There would be a gradual variation in the temperature of the air from the equator northward and southward to the poles, but it would be so gradual that less wind currents would disturb the surface of the waters than the wind currents which disturb the vast spread of the placid Pacific ocean.

When the ice from the north frigid zone moved south, followed by what was the arctic regions, and the antarctic regions moved north, so as to occupy a position over which the sun would be vertical once a day, there would be such an unevenness of the temperature of the water that there would be wind currents. There would be fogs, or the ascension of vapor, and an unusual fall of rain, but there would be no wind storms like those

formed by the change of pressures through the heating of air on the continents. But gradually the ice would melt, and the waters would mix and become more uniform in temperature. The variation from the equator would hardly be perceptible. Evaporations would cease. The sun would shine over the watery waste in undimmed splendor. The surface of the water would appear like a sea of smooth glass. An impressive stillness would reign everywhere, not like the stillness which impresses a man when he is alone on a lake in a dense forest, when there is not a breath of wind sufficient to stir an aspen leaf, so that the lake becomes a mirror to reflect the trees near the water's edge, but a similar stillness of water, where nought could be seen beyond the ark which floated on the waters of the flood. How often have passengers in the broad Pacific ocean stood on deck and gazed on the vast expanse of waters which seemed to be inclosed in a circle, where the sky touched the visible horizon; but they felt that the ship was staunch, and that by sailing two or three thousands of miles beyond they would reach land. But as yet for the ark there was no harbor. Still, Noah had faith in God, for when He commanded him to take animals into the ark, to keep seed alive until the flood abated, he obeyed. Now that the ark had ceased to roll, how reasonable that Noah might think that the waters had abated, so he sent forth a raven, but it did not return. It would seem that it had found a floating carcass of some huge beast which had floated to a point where the raven could reach it. As the animals were carried to the new arctic regions, it would first freeze before it floated south, to become a resting-place, and food for the raven. Next he sent forth a dove, but the waters still covered the earth, and she returned to him, and he put forth his hand and took her in. After seven days more, he again sent forth a dove, and it returned with an olive leaf plucked off. Then he knew that the waters were abated.

When the ark had rested on the mountains of Ararat, the centrifugal force was slowly yet surely upheaving the new continent. It must attain a certain height before there would be an even balance between the force of gravity and the centrifugal force. It has been shown that the centrifugal force uplifts the governor balls of a steam engine to a certain height, and, if the motion which produces the centrifugal force is uniform, they will remain at that height, but if the motion is lessened, they will fall a certain degree, according to the ratio of the lessened motion. Now, it is known that the rotary motion of the earth is uniform, so that after the continents attained a certain height, they would remain at that

height. According to this law, not only had the mountains of Ararat previously risen, so that the ark rested on them, but they continued to rise afterwards above the surface of the water. Following the first appearance of the steep sides of the mountains, were the broader and more expansive valleys, where olive and other trees had sunken. It is not reasonable that the olive leaf plucked had budded and grown in seven days; but it is reasonable that a few of the olive trees had not been gathered into impacted masses for the formation of coal. But in fourteen days the grasses would spring from the ground, and grow to a size that graminivorous animals could live on them. Then there would be dead animals not yet decayed, and fish in the pools, just after the flood had abated, which would furnish food for the carnivorous animals. And, doubtless, Noah had still a store of food to furnish himself and family until the earth could produce it. After the mountains had risen to a stationary height, the temperature at their tops would become too cold for man or beast. Then both the human race and animals would descend to the valleys below, and spread over the earth.

The ark would crumble to dust, and its detritus would be scattered over the plains, so that no trace of it can be found. Not only the names of some countries, but the names of the ranges of mountains are changed through provincial usage, so it would be futile to look for the identical mountain on which the ark rested. The composition of the rocks forms enduring evidence that a flood covered the whole earth.

According to the command which God gave, and in conformity with the natural law He made to secure the fulfilment of it, human beings and all the beasts and other creatures that were in the ark began to multiply in numbers. Animals suited to live in a tropical climate migrated to the warmer parts of the new Asia, and utilizing the then existing isthmuses, certain animals migrated to the adjacent islands. Some of the genus *Cervus* prefer a cold climate. These would migrate east and west in the north temperate zone in Asia, and in summer some of them would penetrate the arctic zone. They would extend their migrations to northeastern Siberia. Doubtless the Behring Straits was so narrow then, that it would freeze over. Then the hare and deer would cross over into northwestern America. Carnivorous animals suited to a northern climate would follow after them.

After the human race began to multiply, there would be among them men who had a marked penchant for hunting. Such men would follow the migration of animals. It is reasonable that hunters only would follow the

animals to America via the Behring Straits, and because of the game that had preceded them hundreds of years before, and which had multiplied without molestation, save from the carnivorous kinds of beasts, they would likely leave Asia forever and thereby become a distinct race of people. Everyone versed in ethnology knows that when America was discovered, it was sparsely populated. Inferentially, it was not peopled as long as Asia. Had the American Indians been cannibals, the sparseness of population could be accounted for. Their mode of living was precarious, hence many would die of famine in particular years. Their wars, also, hindered the rapid increase of population. Still, if the country had been settled as long as Asia, it is reasonable to conclude that the population of America five hundred years ago would have been greater than it was when it was discovered by Columbus. Some Europeans take pet animals with them when they emigrate. It is quite reasonable that the first settlers from Asia brought pet monkeys and birds with them. And it has been noticed, in another part of this work, that some animals thrive in a new country, and other kinds become extinct. There is a disease which is contagious, and which affects sheep in Australia. If there was no human remedy for this disease, doubtless sheep would become extinct in this great island. But rabbits thrive there, and if there was no human means of checking their geometrical increase in numbers, they would denude the country of grass, and then they would all die.

It is no proof that no general flood covered the earth in one year because some kinds of animals are found in America which are not found in Europe. The bear, or genus *Ursus*, is found in Europe, Asia, and America, but like the fox and grouse, it is white in the arctic regions and brown further south. In other parts, where there is plenty of frugivorous foods for it to eat, the color of the bear is black. This proves that climate and foods affect the color of animals. The color of the African has long been a puzzle to the ethnologists, but until they can explain why a flock of white sheep may have one or more black lambs, they will continue to be puzzled, just as hitherto they have been puzzled, to find a cause for even a partial deluge sufficient to destroy the human race in the time of Noah.

I am not such an egotist as to suppose that no one knows anything but myself. I think I am as ready to admit a scientific truth as anyone. Science teaches that hydrogen is a simple element. The able chemist Cavendish first described it. I bow to such men as Cavendish, because they enrich science with new facts. The mental powers which enable

one to learn words and to compute numbers, to measure angles, circles and spheres, and to observe things and to remember their qualities and actions, enable the possessor of these powers to become educated. Education does not seem to call into action the deductive reasoning powers. This accounts for the observation often made that there are learned fools. A man may have only a moderate education, and yet he may have a large development of the deductive reasoning powers: he then possesses the gift of common sense. Let an observer of character go into a new country, and he will see many illustrations of this idea. If he devotes special attention to the study of traits of character, he will find hundreds of persons who are the sons of wealthy gentlemen. These men are generally well educated; some of them will show in their management good, common sense. They need no special teaching to enable them to succeed in the pursuit of wealth, happiness, and respectability. The blunders of the others, especially when they persist in carrying out their own ideas, make them a laughing-stock. This sort of persons are more ready to listen to the opinions of men who are like themselves, than to men having good, common sense. "Birds of a feather flock together."

NEW THEORY OF CREATION.

Science teaches that water is a compound of hydrogen and oxygen, and also that combustion will cause hydrogen and oxygen gas to unite and form the liquid water. I did not discover this scientific fact, but I have used it in a train of deductive reasoning to explain the cause of light on the day of creation, independent of incandescent metals, the light of the nebula stars, or even the light of the sun, which was placed in the firmament on the fourth day of creation.

In my essay on Creation, I have endeavored to show that the earth was created in the time stated by Moses, counting the day only twenty-four hours in length. The following is a brief synopsis of the work:

Water, changed into the original gases of which it is composed, expands a thousand times, *i. e.*, a cubic mile of water would make a thousand cubic miles of hydrogen and oxygen gas, having a density equal to that of air at the surface of the earth, but these gases are very elastic according to experiments made by Mr. Boil. These gases are very expansive. The Hon. Mr. Boil found that air at first expanded nine times; then in another experiment, it dilated thirty-one times; again into sixty, and then into 150 times its previous volume. Afterwards it was brought to expand to 13,679 times the space it originally occupied, and all this was effected by its own

expansive force without the aid of heat. (See Dr. Thomas Dick's works on the Atmosphere.) Hence, if all the water in the earth was changed into hydrogen and oxygen and expanded to the extent they are known to expand, the earth would be surrounded with a gaseous envelope that would reach from the surface of the earth to at least five hundred thousand miles. If the solid materials of the earth, which are composed of substances more or less resolvable into gas, were changed also into gases and eliminated, they would add to the volume or density of such a gaseous body surrounding the earth. Now, if the non-gaseous matter of the earth was reduced to exceedingly fine particles of dust and diffused throughout such a gaseous expanse, like dust in the air of a room just swept, and the place where the earth existed was left void, the earth, according to my own theory, would be in the condition that it was in the beginning of creation. There would be chlorine gas and some metalliferous substances in the form of dust which would ignite in it. The diffusion of metalliferous substances, such as sulphur, copper, zinc, throughout such a gaseous body when charged with a certain amount of heat, would produce electric sparks, and electric sparks will ignite hydrogen, and hydrogen when supported by oxygen will burn with a flame, and steam will be the result from the union. Carbon and lime was present in the gases, for they are in the earth. Carbon and lime in a flame produced by burning hydrogen produces the most brilliant light. But the flame produced by burning hydrogen is intensely hot; all the metallic particles of the unformed earth existing in such flame would be rendered red hot or incandescent, and then if conglomerated in this condition would make a red hot earth of nearly eight thousand miles in diameter. Much of the non-gaseous substances would combine with the steam and both would have to cool off before they condensed to vapor, so that drops of water could be formed. These drops would unite geometrically, and then drawn by gravity to the earth would cover up the red hot earth with non-heated materials, so that men and beasts could walk on it unharmed as soon as the dry land was made to appear. In my essay on Creation, I have shown that the whole earth was covered with water before it began to rotate. I have also explained the cause of its rotary motion, but I trace all causes back to the first great cause of all things, the Creator of the heavens and the earth, and all that is in them.

A collection of facts relating to earthquakes and volcanoes would form a branch of science. At present more is known of the phenomena of earthquakes and volcanoes than the cause

of them. Doubtless, volcanoes have their incipient cause in internal fires. Ashes are emitted from the craters of volcanoes. Ashes are formed by the burning of graphite and coal, and other substances. It seems unreasonable that the internal matter under the crust of the earth could be concentrated in a particular locality, so as to cause a volcano in that locality; but the combustion of graphite, or very solid coal, existing at a depth of a mile below the surface of the earth, would in time form a superheated cavern. There are fissures which convey water from the deep below the surface of the earth to elevated points. Some of the fissures convey boiling water high up in the mountain passes. It is reasonable that through certain causes, and in certain instances, the water has ceased to flow through some of the fissures; then, being open above, atmospheric pressure would force air down through them. Now, all that would be necessary to cause a combustion of a deep formation of carbon or sulphur, would be a current of electricity, which would be intercepted by the graphite or sulphur, and, thus, igniting the coal or sulphur. The supply of air, in conjunction with the current of electricity, would cause the combustion of the graphite or sulphur. Then a superheated cavern would be formed. In process of time a fissure with water would be broached. Water would flow into the heated cavern, then steam would be formed on an immense scale. Either a volcanic eruption or earthquake would follow. The steam would cause the flowage of the water in the fissure carrying it to be reversed. The rocks between the fissure would be heaved. They would undulate like waves, and the commotion would extend to the length of the fissure, and in a lateral direction to the width of it, which in some instances reaches hundreds of miles. Then the steam would be condensed, and water would flow again in the heated cavern, and another earthquake would follow; but perhaps of less violence, since the internal fire would be partly quenched by the water which first flowed into the cavern. A third or fourth inflowage would put the fire out, and the quaking of the earth would cease.

I have given this short synopsis of my explanation of one of the causes of earthquakes and volcanoes. If I were a president of a great college, all I would have to say in order to end the consideration of this subject, would be to say that it is *my opinion* that the islands and continents were *not* upheaved by volcanic agency.

This work will be extensively circulated in the towns where I will lecture. It will excite discussion. Men of ordinary learning in the

towns and cities will ask the professional gentlemen of their acquaintance their opinion of the new scientific dogma. Men who have achieved popularity, and whose income depends on that popularity, are very careful not to jeopardize their popularity; hence, they are wary in the expression of opinions. Their first answer may be:—I have not read the work. Then perhaps they will be urged to read it. If they have expressed the opinion that the deluge spoken of in the bible was only partial, they will not only find that idea refuted, but a demonstration that the deluge recorded in the 7th chapter of Genesis was just what the bible said it was—a flood that covered all the mountains and hills—so that “All in whose nostrils was the breath of life, of all that was in the dry land, died.”

If they have expressed the opinion that at first the whole earth was red hot, and that millions of years had to elapse before the earth was fit for human beings to live on it, and that there was subsequently an ice age which was followed by a mild era, they will not only find it explained how the earth was made so, that the surface was never red hot, but a complete refutation of the modern conception of a glacial age.

If they have taught that the coal fields were formed from peat bogs, they will not only find this theory refuted, but a rational explanation of the way the coal fields were formed. Now, if one of them accepts the explanation, and if his love of candor exceeds his pride, he will boldly and publicly state that those professors who have taught that the earth was at first a vaporous body, requiring millions of years to cool to a semi-red hot, solid condition, and millions of years more to form a cool crust, so that man could live on it; that there was an ice age followed by a temperate climate; and that the flood spoken of in the Bible as general, was only partial,—were simply mistaken. Then he will express his regrets that he was led by the high position held by said professors to teach ideas that were not in harmony with the spirit and letter of the Word of God. Methinks it would be no more mortifying for a man to acknowledge that he was mistaken on this point, than to acknowledge by counter-teaching that his forefathers were mistaken in their idea as to the extent of the deluge.

But another professional gentleman may not be willing to make a confession in harmony with his convictions, but he is expected to say something, however little that may be. I can fancy the manner in which he will express his little opinion. With a slight shrug of his shoulder and a disdainful toss of his head, he may say that he *does not agree* with the author of the work, and he may think that such an expres-

sion as quite sufficient to convince his friend that the conclusions in the work are not sound. Expression of such an opinion may satisfy a man who accepts with childlike faith the opinions of his monitor, but it will not satisfy an intelligent man who is capable of forming an independent opinion. If a professional gentleman can give no better reason why he does not believe a scientific opinion than the simple statement that he does not agree with it, and because it does not accord with previous teaching, it may be taken as evidence that he can give no reason for the rejection of the scientific ideas expounded in this essay.

I have no fear that this work will suffer in the estimation of the reading public through an exhaustive criticism of it by any professor of a college, publicly given above his own name; even though he should animadvert on the line of argument and the conclusions given in it with the same unsparing hand that I have criticised the theories which some of them have adopted. The most that I might fear from any of them is the disparaging remark, that the work was not worthy of their attention; though the subject is worthy of the attention of the most learned gentleman. Even Bob Ingersol attacked the truth and inspiration of the Mosaic account of the Deluge. He made light of it in his lectures, because, as he says, the idea is not in conformity with science. I will send Col. Robert G. Ingersol a copy of this work, and if he is the genius that many persons think he is, he will reply to it. But he too, like other popular persons, may say that he does not think the work worth replying to. I would have reason to think in regard to those learned and popular men who might use that remark about any of my writings, that the works were too far above, instead of beneath, their notice. I take it as evidence that the arguments I have given are unanswerable by them. Surely, when such very distinguished noblemen as the Earl of Dufferin, the Marquis of Lorne, and the Marquis of Lansdowne, have been pleased to honor the author of this work with letters containing expressions of thanks for his writings, it would seem hardly in keeping with the idea that the author has no merit as a writer. But some are apt to think that these expressions of thanks from Governors are given merely as acts of courtesy. Surely, no one should suppose that a Governor would thank an author for a work that was not worth the attention of any *learned* gentleman. But the following extracts of letters imply more than an act of courtesy merely. Surely, the most capable finance minister who ever managed the finances of Canada, the present Lieut.-Governor of New Brunswick, Sir Leonard Tilley, ought to be

capable of judging whether a thing has merit or not.

The following is an extract from a letter from this distinguished statesman:

[Copy.] OTTAWA, 2nd Feb., 1880.

DEAR SIR:—Many thanks for your interesting letter of the 24th Jan. I shall take an early opportunity to read it again, etc.

S. L. TILLEY.

To J. W. Crouter, Esq.

Surely, a letter worthy of re-perusal, is worthy of attention.

The letter of which the following is a copy ought to be considered as more than an expression of an act of courtesy:

[Copy.] OTTAWA, 26th March, 1888.

DEAR SIR:—I am directed by Sir John Macdonald to acknowledge the receipt of your letter of 22nd March, 1888, on the subject of the Inland Fisheries of the Dominion, and to say that he has transferred the same to the Minister of Marine and Fisheries, with the request that he will give your remarks his best consideration.

I am, dear sir, yours truly,

JOSEPH POPE.

To J. W. Crouter, Esq.

Surely, remarks which the most capable statesman in Canada deemed worthy of the consideration of another cabinet minister, should be considered worthy of the attention of a college professor.

It is not from a spirit of ostentation that I have had the letters from statesmen inserted in this pamphlet, but for the following reason: During the last five years I have claimed that I had new theories on Creation and the Deluge, which are in harmony with the literal reading of the Bible account. I have stated to many persons that I had these new scientific theories. I have frequently been asked if I had submitted my views on these subjects to a professor of a college. I have answered that I had sent pamphlets containing some of my new scientific ideas to different professors, but they did not seem to pay any attention to them. Then these parties would sting me with these words, viz., that perhaps the professors did not think my work was worthy of their notice. They did not conclude, as I did, that the said professors could not controvert the new scientific dogma.

It would be an unseemly thing for any theological professor to state that there was nothing new in this work. If the theologians knew that, on scientific principles, a deluge lasting less than a year covered the whole earth, and then to cater to the opinions of popular scientists have accepted and taught that the Noachian deluge was a partial one, which submerged a limited portion of the

earth where the then human race was supposed to dwell, and did not cover the whole face of the terrestrial earth or globe, they ought to lose the high esteem in which they are held. No, no; I cannot think that any theological professor would be so bold as to state that the scientific theory of a general deluge, as explained in this work, was ever taught in print before. I intend to send a copy of this work to each professor in every Canadian college, in order to give them a fair opportunity to controvert it. I do not intend to have repeated additions of the work printed, if it is not sound in its principles.

If, contrary to my expectations, several of the leading professors of Canadian colleges recommend the work, so that the public can learn the fact, then the trustees of the churches in the towns I may visit, will feel justified in granting me the use of the churches under their charge, in order to repeat my lecture on Creation.

This will encourage me to publish my complete scientific exegesis in the defence of the Bible, which will do more to undermine the foundation of modern skepticism than all the works hitherto published on the subject.

It is well known by publishers and librarians that about 99 per cent. of the books read by the people are other than scientific works; hence, it ought to be evident to a man of good understanding that to draw attention to such works through the press would cost more than the receipts from the sale of the works. This is the reason why such works are rarely advertised. The clergy are the only ones who can, without loss, teach the true scientific principles which prove the inspiration of the Bible; hence my desire to place a copy of my works in the hands of every clergyman in the world.

A theory or scientific idea, founded on a hypothesis, may be true. In time someone having a peculiar adaptation for philosophical research and the acquisition of facts demonstrates the truth or falseness of the theory; but when a theory has been demonstrated to be true on the basis of absolute facts, it can never be successfully controverted. The theory will remain forever a scientific truth.

The Rev. Joseph Cook, of Boston, gets \$250 a night for lecturing on "The Harmony of Modern Geological Theories;" and yet the Ex-Mayor of Vancouver, B. C., who heard the reverend gentleman lecture in Ottawa, said to a reporter for the press, that in his opinion the Rev. Joseph Cook signally failed to show any harmony between modern science and the Bible account. My lecture is in harmony with the literal account of Creation as given in the first chapter of Genesis; therefore, according to the fitness of the two discourses,

my lecture should be given the preference. The press does not care to insert lengthy scientific subjects. Every publisher knows that the expense necessary to advertise this work throughout Canada, would be greater than the profits on the sale of the work. Hence, in order that the true idea of a general deluge may be extensively taught, a single copy of this work should be sent to each of the ministers in Canada. I intend to expend the tenth part of the receipts arising from my lecture on Creation, to give a free copy to every minister in Canada. And should I visit the United States this summer and receive an invitation to lecture while there, I will apply a tenth part of the receipts to send free copies of this work to American ministers.

It may be inferred from the eulogistic remark I have made with reference to Sir John, that I am a Tory of the most pronounced type. I think I can express a fair opinion, even if I am neutral as a political partisan.

I know from observation—having traveled in the States—that the common school system of Canada is superior to that of the district school system in the United States, inasmuch as the common schools of the greater part of Canada are continued throughout the year, save a six-weeks' vacation during the hot summer season, while the United States district or rural schools have two terms of four months each in a year—one a summer term, which continues right on through the hot summer months, while they are closed during the mild autumn weather; then a winter term, even in such a country as Dakota, where in one instance the children and teacher froze to death during the continuance of a blizzard.

It used to be the custom in the States to change the teachers with every change of term, viz., twice a year. Hence, it is not surprising that young men who could not get a certificate to teach school in Ontario, could go over to Michigan and get a second-class certificate to teach in that State; for the reason that the school system of the States is not good enough to enable the school authorities to grade up their teachers to a high standard. It is admitted that the graduates of theology, law, and medicine in Canada, are more thoroughly educated than the same class in the States.

Not only in the matter of education but also in the governmental system of Canada and of the neighboring States, Canada can boast of the best. The provincial governments of Canada, which are analogous to the state governments, receive disbursements from the consolidated revenue of the Dominion government, which enables the provincial governments of Canada to do more public works, in proportion to the

population, than the state governments do, and that, too, without a direct tax, while the state governments must levy a direct tax for everything, not only to pay themselves for their services, but for every other expenditure they make.

The constitution of the United States prohibits the expenditure of money on nearly all public works, save works connected with the mails and navigation. Congress expends no money on railways. If the Dominion government should not spend any more money on public works than the United States does, according to population, the bonded debt of Canada could be paid in twenty-five years. The debt of Canada, incurred mainly for the construction of public works, is less per capita than the debt of the United States at the close of the war; and the United States still owe over a thousand millions of dollars, notwithstanding their customs duties and other taxes are higher than they are in Canada.

It is admitted that the administration of justice is more efficient in Canada than in the States. Canada needs no secret organization to enforce law.

When the superiority of the Canadian government over the government of our southern neighbors is considered, methinks that any man, no matter what may be his partisan leanings, might in perfect fairness say that the Right Honorable Sir John Macdonald is the greatest statesman in America, since he has been the leader of the Canadian government for nearly fifty years. But it may be asked, if Canada has such a good government, why is it that the United States can boast of twelve times greater population? The answer to this question is easy and reasonable. It is mainly the climatic differences of the two countries, which is more favorable in the Southern and Middle States. If 100 years ago the climate of the adjoining countries could have been reversed, so that the climate of Canada, from her southern boundary northward, would have been similar to the climate of the United States, from their northern boundary southward, to the Gulf of Mexico, and the climate of the United States had been similar to the climate bordering on the Hudson's Bay and arctic ocean, then Canada would have had sixty millions of people. With this difference: they would

have been more noble and intelligent, for the superior educational facilities enjoyed by Canadians develop intelligence of mind and nobleness of heart. Canada, with such climatic conditions, would have had a greater mileage of railways than exists now in the States, for Canada with five millions of people has constructed a railway that spans the continent. The States had nearly forty millions of people before the citizens living in Atlantic cities could reach a city on the Pacific coast by railway.

Canada would have outstripped the world in her merchant marine, just as she now does exceed the United States, according to population, in this respect. She would have out-rivaled the world in manufactured products, just as her sons in the States excel all others in inventions.

For climatic reasons, the population of Canada is mainly located along her southern border, but a love of good government fosters the loyal spirit which makes the people cling to their native land; so that now with the aid government can give to railways, the people are stretching their settlements far to the north and northwest. Not without hope of prosperity, which is assured by abundant crops from rich soil, and the best horses and cattle and sheep, which is proved by the preference given to the sale of these animals in foreign markets. Settlers find that they can gain wealth in Canada from these sources; but there are rich mines of gold, silver, copper, iron and coal, etc., etc., in addition.

I have no antipathy to the people of the United States. My grand-parents, U. E. L., were born in what is now the State of New York. If the Americans could lay aside a large degree of prejudice and consider the matter fairly, and then accept an impartial Governor or Viceroy, instead of a partizan President—one who only represents the opinion of a moiety of the people—then the people of the States could have the co-operation of the best statesmen in the world in the making of their laws. Then the fear of anarchy would not trouble any of them either awake or in their dreams while sleeping,—but in a few years the English speaking people from the arctic circle to the Gulf of Mexico would feel proud that they formed part of the greatest, grandest and best empire on the face of the globe.

