IS THE EARTH A GLOBE?

PART SECOND

CHAPTER XIII.

Demonstrated Evidences that the Earth is Not a Globe.

WHEN producing the most infallible evidences in regard to unscriptural tenets or dogmas, which have long been held, and quite universally believed, notwithstanding the evidences and tests that may have been demonstrated by an axiom, and is virtually evident to the child of twelve years, we are met with something like this: "Why have not the savants of the world found this out before? Do you know more than all the wise men that have lived before you?"

We have no reputation as a philosopher, astronomer or a savant, to sacrifice. We have no stakes driven or anchor cast that we cannot take up for demonstrated truth, and facts evident to the degree of sense and reason that we possess.

It has been stated, and perhaps honestly supposed, that either the globular theory of the formation of the earth, or the earth a plane, could be proven and sustained by the Scriptures. But the infallible evidence that we have previously produced in the forepart of this work, is sufficient to silence any just entertainment of such an idea. "That no two facts or truths disagree," having been our motto, we, therefore, laid our foundation for proof of our position from the Scriptures in the forepart of our work. We now start on this branch of the subject, with that which we believe to be the *true laws* of *science and mechanism*, and that which will be sustained by the infallible Word.

We have been taught that this earth is a globe, approximately 8,000 miles in diameter, consequently about 25,000 miles in circumference. This circumference *necessarily* forms a curvature of eight inches to the mile; this is accepted, and is the *acknowledged standard* by all surveyors, engineers, navigators and astronomers of the world, who believe the so-called Newtonian theory. This amount of curvature to the mile (on a circle of 25,000 miles), may be, and has been proven correct, not only by figures, but by draught or diagram. If it is desirable to demonstrate the matter by draught on a regular scale, we give the following for those who have not the knowledge or experience of a practical draughtsman: For the convenience of the mechanic, or anyone who may have a scale graduated to hundredths of an inch, let them strike one-fourth of a circle, which radius shall be forty inches; this represents one inch to every 100 miles, consequently, the hundredths on your scale represents the miles on your diagram. From the *center* draw a vertical and right angle parallel line to the periphery of the arc; you now have a geometrical quadrant of the circle; you now have a right angle whose two sides are forty inches each; next draw a tangent line from each end of the arc, and square the arc; you now have an arc forty inches square, the radius of which is equal to its sides, or forty inches. From the periphery of the arc run forty lines, one inch apart, vertical and horizontal to the edge of the square. This being done you have a diagram, which, if accurately drawn, gives the amount of curvature, or divergency from the vertical in miles. While this diagram does not give the fractional part of a mile on so small a scale, yet it is quite satisfactory, in round numbers showing that the accepted system of calculating the curvature on a circle 25,000 miles is correct. Further on we give a scale less complicated that may aid in the construction of the above.

That about *three-fourths* of the surface of the *supposed globe* is water, we need not stop to prove. And so *sure* as this is the case, so sure the waters conform to that curve, and make *three-fourths* of the surface of the globe. Whether the waters are in a canal, ditch, lake, or ocean; whether a body of water one inch in depth, or three miles in depth, whether it is the weight of a feather, cobweb, or a thousand tons; whether it be at the *supposed* poles of the globe, where the motion could be *only half* the motion of the *hour-hand of the clock*, or one thousand miles an hour at the equator; all must conform to that curve, and those motions; all must be held in position by *the same attraction*, or force.

But before we speculate further, or multiply wonders, let us see if we can prove that *water has no curvature* or convexity. If we fail to do this, we fail of sustaining our faith and position. In order to get a straight line we must first get something that does not conform to any curve whatever, in any direction, in the least particle. Where, and what shall we take to test this matter? Happily, there are two things that can be demonstrated to be straight: the *rays of light* and the *line of sight*. If there remain the least doubt in regard to the first, take a straight stick and a lamp, and see if you can throw a shadow around the corner of a square box or cube. If, in regard to the second, there remain a question, just see if you can see around the corner of the house or over the top, by any device—try a crooked tube, if you please. We admit that reflection and refraction, either, may produce an image of a substance. But *not the real substance*.

Mr. Webster says that a "*straight line* is the shortest distance between two given points.' Grant it; and who can give a better definition? But it will be interesting to follow Mr. Webster a little in his definitions of his geometrical lines, and notice how "straight" he works. He defines a level thus: "Not having one part higher than another; even, flat, smooth, horizontal;....*a line everywhere parallel to the surface of still water.*" He also says, "It is a curve, the center of which *coincides* with the *earth's center*; a horizontal line or surface." (All waters conform to the *curve* of the earth's surface.) Here Mr. Webster calls a *level* a *curve* and conforms it to the supposed curve of the earth. Now, we will notice what Mr. W. says in another place, under the head of "curve," as especially giving a definition of the word: "A line of which no three consecutive points are in the same straight line." And who could give or ask a better definition? It is, without doubt, the evident conception of every intelligent mind in regard to a curve. But, Mr. Webster, you have just defined a level as not having one part higher than another; you also say it is a curve. We have no railings against the much-honored professor, but leave the matter for the time with the reader, to draw such conclusions as best he can. We venture to assume, however, that he has followed a hypothetical theory, taking things for granted without a demonstration. But these conclusions of Mr. Webster are inevitable to all who take the Newtonian theory; "that *even, flat, smooth, horizontal—a line or plane—is everywhere* parallel to *still water;*" and again he says: "A curve is a line of which no three consecutive points are in the same straight line;" viz., that *a straight line* or the shortest distance between two given points, is a curve, conforming to the curve of the earth! Then, Mr. Webster, we would ask which way, or to what part of the earth, does a vertical line conform, drawn through the center of the supposed globe?

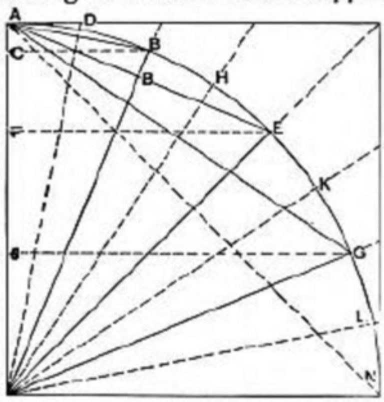

Fig. 6.

Figure 6 is a diagram and *proportionate scale*, showing the amount of divergency there would be circumnavigating a globe eight thousand miles in diameter, also the amount of convexity there would be above an air or straight line drawn from point to point on a globe.

We will now start at the left hand upper corner at A and go to B; we have certainly gone down to C on the vertical, and D is the chord of the arc, or the convexity existing between point and point—A and B. Again, start at A and go to E; we have descended to F on the vertical, and the convexity is B B' or one fourth of the distance from A to F. On the periphery of the arc the radiating lines are equally distanced apart, while A, C, F, J and the radiating point shows the actual amount of increase downward there would be in sailing around a globe whose poles are vertical, or even inclined, as claimed. At N, the equator, if sailing north or south the ship is vertical; if she changes her course, and sails at right angles with the ship's compass, she is then on beam's-end and at right angles from her former position.

By this scale we demonstrate to an *infallible certainty*—First: That the amount of divergency as we go from the prime vertical, is eight inches multiplied by the square of the distance. Example: Let 15 miles be the distance, $15 \times 15 = 225 \times 2 = 450 \div 3 = 150$. (See table for curvature.) Second: That the amount of convexity between two given points on any circle is, approximately, one-fourth of the divergency. (See diagram, fig. 6.)

The above rules are the accepted ones by scientists of the day, and for the first thousand miles the divergency or downward tendency increases at a greater *pro rata*, while the apex of the convexity or chord of the arc ever remains the same ratio to distance.

We will notice another standard work in regard to this straight and curved line theory. The Encyclopædia Britannica says: "The amount of curvature or diverging from the vertical increases as the square of the distances. That the curvature of the earth is eight inches for the first mile, thirty-two for the second mile, and so on." In other words, square the diameter, multiply the product by eight and divide by twelve, if you wish it in feet and inches. This formula is the accepted one throughout among navigators, astronomers, etc.

But we will just now inquire in regard to a *level*. "A line drawn at right angles, crossing the plumb-line (or vertical), and touching the earth's surface is a *true level* only in that particular spot; but if the line which crosses the plumb be continued for any considerable length, it will rise above the surface, and the *apparent* level will be above the true one."

Now, there are things that are *apparent* that are true, also things apparent and yet *untrue*. We shall, therefore, try to make demonstrated facts appear as such. As we have before alluded, there is a *standard* to which all intelligent people who have eyes, whether cross-eyed, nigh or far-sighted, may resort for proof, viz., the *line* of *sight* and the *rays* of *light* It is a fact which no astronomer, surveyor or engineer will deny or question, that the theodolite (telescope and level of the surveyor) conforms to and coincides with the *spirit level*, and these coincide with the line of sight, which *does not* conform to the supposed curve of the earth or to any curve whatever, *apparent* or *unapparent*.

For the convenience of the readers of these pages we give a table which will show the amount of curvature, from one mile to one hundred, in feet and fractions thereof. The same may be found in any standard work on Geodesy or Geometry. To find the curvature in any number of miles not given in this table, square the distance by itself, multiply that product by 8 and divide by 12; the quotient is the curvature required. Another simple and short method is: Square the distance, of which the amount of divergency is required, multiply the product by 2 and divide by *3*. Example, distance 20 miles: 20x20=400; 400x2=300; 800÷*3*=266⅔ feet, or 266 feet 8 inches. The hill or apex of curvation between point and point, as a matter of course, would be just one-fourth the amount of divergency downward from the vertical of the two points in question. (See also diagram and explanation, fig. 6.)

Table for Curvature of the Earth.

Miles Distance	Feet	Miles Distance	Feet
1	0. 8	30	600
2	0.32	40	1,066
3	6	50	1,666
4	10	60	2,400
5	16	70	3,266
6	24	80	4,266
7	32	90	5,440
8	42	100	6,666

We now offer a few facts which have been demonstrated, and may be repeated by anyone so disposed, that fully illustrate, and also corroborate the impossibility of convexity to water, or in short, of the earth's being a globe.

I have on my table a profile map of the canals of the state of New York, recently procured of the State Engineer and Surveyor, at Albany, N. Y. This map shows the elevation of the