

that we had seen the sunne upon the 24 of Janarie which made us all glad, and we gave God hearty thanks for His grace shewed unto us, that that glorious light appeared unto us again."

According to the ordinary calculations, the sun should not have appeared until the 9th February. Its upper edge should have been  $4^{\circ} 26'$  below the horizon! General refraction not being more than  $34'$ . For fourteen days after, the refraction gradually grew less.

After the return to Holland, the phenomenon caused the greatest surprise, and gave rise to much controversy among the learned men of the day. The opinion generally was that it was "opposed to nature and reason."

### Inconsistency of Limitless Space.

A rational conception of the physical or organic form of the universe cannot be entertained in any logical mind consistent with any idea of the earth as a rotating globe. That which destroys conception of the centre and circumference of the universe also destroys the idea of its form—the assumption that space is eternal and illimitable prevents any conclusion that the cosmos or world of existence, has any centre, for how could a *centre* be conceived in a universe whose circumference (!) is *infinite space*! The principles of modern astronomy are thus suicidal—the hypothesis demands the action of tangential and centripetal forces to hold worlds in position—and this "law" of the two potential forces, logically analysed, refutes the system and destroys its claims. If one sphere acquires the actions of these two forces upon it, there is no logic which does not lead to the conclusion that all spheres require them—it demands that the moon revolve around the earth, the earth around the sun, the sun around a larger and another sun, and that, in turn, another, and so on *ad infinitum* with an eternity of geometrical progression, through a universe without a centre, without form, and consequently without *existence*, for how can there be existence without the two essential factors of form—centre and circumference? But the idea of boundless space is a product of the astronomer's mind—he reaches this conclusion by assuming the convexity of the earth's surface, and thus loses himself, his science, and his reason in a whirling mass of worlds in a fathomless abyss of space—and agnosticism!—*Herald of Glad Tidings (America)*

### The Peacock's Tail.

The peacock's tail is one of those phenomena which provokingly expand in the face of the extreme evolutionist, spreading insoluble difficulties in his way. Darwin confessed that he could not account for this magnificent appendage to the plumage of a very silly bird. Natural selection and the survival of the fittest seem to be baffled here. The poor peacock flouts his wonderful fan before us, and the complacent science of the day is speechless in front of it. Some of us are not likely to be pronounced or advanced evolutionists until the peacock is persuaded to tell us how he managed to develop this resplendent and iridescent collection of feathered rainbows. We are asked to believe that he did it to please female vanity. But though there is such a quality as female vanity everywhere potentially working, the females usually apply it to their own side rather than the other. This is really too much! The peahen must be the most prodigious admirer of masculine finery in the universe, and must be gifted with an unspeakable, inordinate appetite for the artistic. The perversity of the peacock is proverbial; but to the poor evolutionist, this gorgeous fowl, parading in all Solomon's glory, but without any wisdom at all, is shamefully unfair. Just to indulge the faculty for admiration in the other sex, he struts to and fro in a costume which defies all the pretty fancies of hypothetical assumption.—*Christian Commonwealth.*

## THE EARTH-NOT A GLOBE-REVIEW.

*When the majestic form of Truth stands before the bar of justice,  
that hideous monster, Error, hangs its head in silence.*



"Parallax" Experimentally Proving Water to be Horizontal.

NO. I (NEW SERIES).

SEPTEMBER, 1894.

PRICE 2D.

### UNDER NEW MANAGEMENT.

We are sure that our readers will be sorry to learn that our late Editor (Zetetes) Mr. Albert Smith; who has done such valiant service to the cause of truth; has been, owing to continued illhealth, obliged to give up the Editorial Work of our Magazine. We know that Mr. Smith is one of those men who lead a very busy life, and we fear that he has laboured in this, and other causes, with a zeal far beyond his physical strength. Since the launching of this herald of truth, he has borne a large share in the battle against scientific infidelity and error. We should have liked him to have been able to continue, but feel it better to lose him partially than altogether. We are thankful to know that as health and time permit, he will write for us, and this I am sure we look forward to with great pleasure. We feel certain that his abilities have been appreciated, and we trust that he will long be spared to us, that we may yet have much enjoyment and instruction from his able pen.

"Under New Management" does not necessarily mean under better management, although we shall do our best to make the journal merit the same good character it has always had. Let us go forward against the popular errors of the day, and expose them to the light. Let the reason and common-sense God has given to us be used aright. We do not complain of men having theories, but we do disagree with them for palming their theories off as absolute truth. They may have their theories if they like, but let them label them as such. Locke has well said:—"Truth, whether in or out of fashion, is the measure of knowledge and the business of the understanding; whatsoever is beside that is nothing but ignorance or something worse. To know many things and know them *all wrong* is not knowledge, or sense, or science."

Many of the things taught in our Schools. Lecture Halls and Churches, are absolutely untrue, and therefore are productive of evil results, the chief of which is the "making of the word of God of non-effect," or of no more value than "old wives fables!" This I trust we shall make plain as we go on, for we intend to speak in no uncertain manner as will be seen by our

#### PLAN OF CAMPAIGN.

- 1st.—To declare and support *practical facts*.
- 2nd.—To expose the errors of *every theoretical* (so called) science.
- 3rd.—To support, and by practical experiments, prove the truthfulness and literal accuracy of *every* scientific statement in the Scriptures of Truth.
- 4th.—To encourage and help enquirers.

We trust that this plan will commend itself to all truth seekers, and in conclusion we would add, that we hope *all* Zetetics, whether Members of the Society or not, will take a copy (more if they can afford it) of each issue to give away or lend to friends and so help to spread the truth, that the earth is a vast irregular Plane, stretched out upon, and standing in and out of the waters of the mighty deep, as Scripture, confirmed by practical facts and common-sense, declares beyond refutation.

## THE PRETENSIONS AND PRETENCES OF MODERN ASTRONOMY.

By James Naylor.

No. 1.\*

It is the pride and boast of Modern Astronomy, that, compared with the ancient systems, it has introduced order for confusion, simplicity for complexity, and placed a comprehension of the universe within the reach of all. And the boast is not without some *seeming* justification; for if the modern system as *ordinarily presented*, be compared with the epicycle systems of the past, the former appears to much greater advantage. Indeed, so much is this the case, that Sir John Herschel might well say in his "*Outlines of Astronomy*:" "We shall take for granted from the outset the Copernican system of the world, relying on the easy, obvious and natural explanation it affords of all the phenomena as they come to be described." Now we are not concerned with a defence of the systems with which modern astronomy is contrasted, except in so far as they teach a plane earth, with the heavenly bodies in subordination to it. We are, however, concerned to show that, in spite of plausible

\* The italicised words in the quotations are ours; large capitals stand for italics in the originals.

appearances to the contrary, modern astronomy, both in its *primaries* and secondaries, is the most complex and confusing system ever palmed upon human credulity. This is a strong statement, but we propose in this, and some following papers, to thoroughly justify it; and also to show, that if any will but put astronomical claims to an impartial investigation, they will inevitably conclude that these claims are but a confused jumble of unproven, contradictory, and self-destructive assumptions, that are utterly unworthy of acceptance in the name of truth. The scope of our labour is tersely expressed by our title, "The pretensions and pretences of modern astronomy," which also conveniently divides those labours into two parts, and gives to the "pretentious," a priority in the order of examination; these latter, however, need not occupy us long, for have they not been graphically portrayed by the great Sir John Herschel himself? Here are his words: "The earth on which we stand and which has served for ages as the unshaken foundation of the firmest structures, either of art or nature, is divested by the astronomer of its attribute of fixity, and conceived by him as turning swiftly on its centre, and at the same time moving onward through space with great rapidity. The sun and the moon . . . become enlarged *in his imagination* into vast globes . . . The planets . . . are to him spacious, elaborate and habitable worlds . . . The stars . . . are to him suns of various and transcendent glory, effulgent centres of life and light to myriads of unseen worlds, so that when after dilating his thoughts to comprehend the grandeur of those ideas his calculations have called up, and exhausting his imagination and the powers of his language to devise similes and metaphors, illustrative of the immensity of the scale upon which *his universe* is constructed, he shrinks back to his native sphere, he finds it in comparison a mere point, so lost . . . as to be invisible and unsuspected from some of its principal and remoter members."

It would be difficult for anyone to surpass language like the foregoing, in either the extent of its *pretensions* or the graphicness of its diction. We will not, therefore, attempt it, but simply content ourselves by stating more formally the claims here asserted:

- 1st.—The Earth, which naturally appears to us as the largest and most beautiful object with which we are acquainted, is viewed by the astronomer as a mere speck of the universe and so utterly insignificant as to be unsuspected either by some of its principal or remoter members.
- 2nd.—Of the Earth's motions of both rotation, and of translation through space are asserted, though its seemingly fixed and immovable character are amongst our earliest and most persistent impressions.
- 3rd.—The sun, moon and planets in astronomy become vast globes,

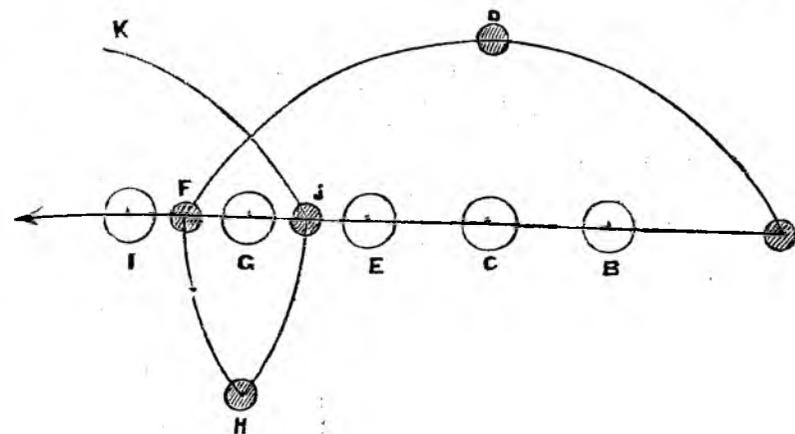
some of which are elaborate and habitable worlds, though to the ordinary mind the two former appear but as centres of light or of heat, and the latter but as a variety of the objects with which the heavens appear studded.

4th.—The stars, which from our earliest recollections have appeared to us as tiny, but withal, beautiful specks are enlarged by the astronomer into resplendent centres of systems; in many cases vaster than the solar one, of which the Earth is asserted to be a member.

5th.—The Universe is of such immensity that it embraces myriads of unseen worlds, where existence is only asserted, or assumed, but not attempted to be proved, even by the astronomer.

But why continue? Let it suffice that astronomy is not content with merely destroying our earliest, most cherished, and assertive observations and impressions, but must also substitute for them ideas of the Universe which appear—both as to time and space—so absolutely boundless as to exhaust the language, impoverish the similes, and render nugatory the metaphors, even of the astronomer! Surely a system with such *pretensions* as these should at least agree with itself, and its various parts should mutually sustain each other. We will now show that this is not the case by proving that these far-reaching *pretensions* are but *pretences* of a most *shameful* character.

It is a fundamental axiom of modern astronomy, that, the planets, with which the Earth is also included, revolve round the sun in elliptical orbits. Now this statement we characterize as a pretence of the most unblushing kind, and the term we use is correctly applied, whether it has reference to the actual statements, or to the pictorial representations. Take the Earth for instance, with whose alleged form of orbit by pictorial illustration we are familiar. There is generally shown a beautifully formed ellipse, with the sun occupying one of the foci, and the earth represented in four different positions to illustrate the four seasons of the year. Now this picture is entirely a false representation of the assumed conditions, for while the earth is making one of its alleged revolutions round the sun, the latter with all the so-called members of the solar system is also alleged to be making rapid rectilinear motions in space. The form, therefore, of the asserted orbit that would thus be described by the earth, or any of the planets, would have no more to do with an ellipse than with any other space enclosing figure. This will be well illustrated by the following diagram.



Let A be the position of the earth—say upon the 20th of September—and B the sun's place at the same date. Now if we suppose that the latter moves from B to C from the 20th of September to 21st of December, then the earth will have performed one-fourth of its asserted revolution round the sun, and will have moved from A to D at right angles, or in quadrature to its former position. On the 21st of March the sun will have moved to E and the earth to F. Then on the 20th of June the former will have moved to G and the latter to H; while lastly, on the following 20th of September, the earth and the sun will occupy the same relative positions as they did a year previously; their position in space only being altered, respectively indicated by I and J. The line A D F H J K represent, therefore, the actual path that would be described in space by the earth during about one year and a quarter, and it requires but the merest glance to see that such a path has no likeness whatever to an ellipse, nor indeed to any other figure enclosing a space.

But if the path described is not an ellipse, nor indeed anything analogous to it, what becomes of the statement that the planets revolve in elliptical orbits, a statement which is the essence of Kepler's first law? Why, evidently, it can only be looked upon as a stupendous pretence, and this all the more when compared with the scientific "Jubilate Deo" that has been sung over the discovery of this so-called "law."

With what elaboration and emphasis astronomers have brought into relief the circumstance that the epicycles and deferents of Ptolemy were totally inadequate to account for the peculiarities of the planetary motions; and that the circular paths, asserted by Copernicus, were also equally insufficient; and then with these they have contrasted the 20 year's labour of Kepler upon the motions of Mars, resulting in his enun-

ciation of the elliptical hypothesis, which, we are told, completely and satisfactorily accounts for all the phenomena. And yet, after all this noise and peans of joy, it is seen that—by the data of the astronomers themselves—the planets do *not* revolve in ellipses, but in a path which it would be difficult to describe as either scientific fish, flesh, fowl, or even a good red herring.

But the assertion of orbital ellipticity is not the only one in Kepler's first law, for it also insists that the sun occupies one of the foci of the ellipses in which the planets revolve. If, however, we look again at the diagram, we shall look in vain, for either that foci or any other.

There can be no occupation of either a foci, or a centre, by a body describing a continuous rectilinear path; and so far as asserted up to the present, this is precisely the path which the sun pursues. But if the sun cannot thus stand in the foci of the planetary ellipses, then another assertion of astronomers is seen to be a pretence, namely: that the sun is the centre of the solar system. We are all familiar with what persistency this proposition has been set forth, and what a commotion was caused in the world by its first propagation. Its insistence covered Copernicus with contemporary obloquy, and nearly cost Galileo his life. Yet all this commotion has been for no purpose, for here in the 19th century, by simply taking the astronomer's own premisses, the sun is seen to be *not* the centre of anything, much less of the so-called solar system!

As being allied also with the foregoing, it may be well to enquire why the planets are said to revolve in orbits at all? The idea of the orbit is derived from the imaginary spheres, to which the ancients supposed the heavenly bodies were fastened and revolved with them. If then the planets moved round some fixed centre, or foci, the term orbit, could, with propriety, be applied to the relative path they would describe.

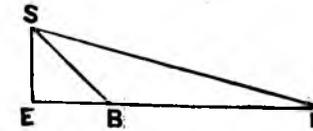
But the planets do *not* revolve round some fixed centre, but, according to the astronomer's own data, they simply move onward in an irregular path—similar to our diagram—instead of a rectilinear one, such as is pursued by the sun. The term orbit, therefore, cannot with any propriety, be applied to the course the planets are said to pursue, for it involves the idea of continuous motion in a *complete* and approximately *circular* path, whereas, the movement alleged is motion in an *incomplete, irregular* but approximately continuous *forward path*. Would it not be just as sensible, therefore, to put light for darkness, as to put one for the other of the two dissimilar ideas we have just contrasted, and we are thus compelled to designate the statement that the planets move in orbits as another astronomical pretence which has no justification even from astronomical data.

*To be continued in our next.*

## “DEDUCTIONS FROM THE THEORY OF A FLAT EARTH”

ANSWERED BY G. M.

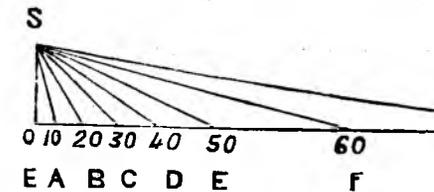
Figure I.



“E (Fig I.) a point upon the equator; B Bordeaux; S the sun; angle E B S sun's observed altitude; B E S is a right angle, hence angle E S B equals 45°, hence the sides E S, E B are equal because they subtend the equal angles at S and B.

Then if N were a point so near the 'North Pole' that the sun's observed altitude equalled one minute of a degree, the distance E N would be 3,450 times E B.”

Figure II.



“Now by the most elementary trigonometry, since angle at E (Fig. II.) is a right angle

$$\frac{A E}{S E} \text{ equals Cotangent of } 10^{\circ}$$

$$\frac{B E}{S E} \text{ equals Cotangent of } 20^{\circ}$$

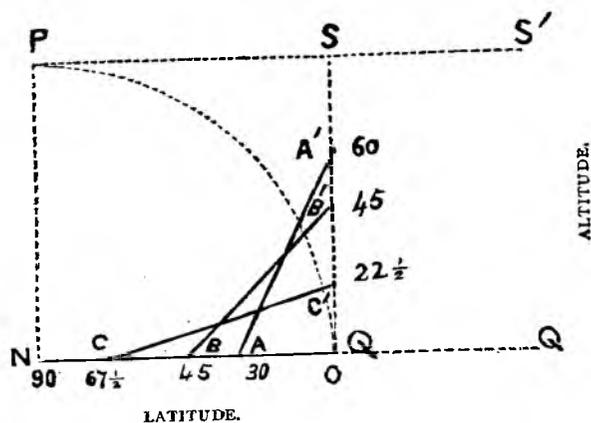
and so on.

Therefore taking S E as unity, the comparative lengths E A, E B, E C, and so on may be got from a table of cotangents, thus—

Cot. 10°	equals	.1763
20°	„	.3639
23°, 30'	„	.4348 (tropic)
45°	„	1.0000
80°	„	5.6713
90°	„	Infinite

Hence the distance from the equator to the North Pole is infinite.”

Figure III.



The above is the title of a paper by C. Harpur, purporting to show the untenable nature of the Flat Earth Theory by reason of the inconsistency of its relative distances in latitude, as exhibited by Plane Trigonometry.

For instance, taking the latitude of Bordeaux as  $45^\circ$ , that would be midway between the equator and the Northern Centre upon the plane—or North Pole upon the sphere: but by a table of cotangents, the Northern Centre—instead of being calculated as twice the distance of Bordeaux from the equator, would appear to be 3,450 times that distance. See Fig. 1.

The author's ultimate conclusion is evidently either the "Flat Earth or the table of cotangents is wrong." That Mr. Harpur himself may be wrong in his method of applying the abstract truth in the mathematical tables to the particular case, as *another possible conclusion*, seems to have escaped his perception! We shall fairly reciprocate his courteous tone, if apart from any advocacy of the Plane Theory, we endeavour to impartially examine his argument (given above ED.). We omit all criticism of his Part 3 on the assumption that the effect of refraction upon observed altitudes would be the same for both theories—of sphere and plane. The gist of his argument is in connection with his Part II.

In determining latitude his astronomy is *not exact*, for he says—"the name 'latitude  $10^\circ$ ' is given by geographers to that part of the earth where they find by observation that the height of the pole-star is  $10^\circ$  and of the sun at noon at the equinox  $80^\circ$ ." He ought to know that no such spot is to be found, for the simple reason that the pole-stars declination is  $1^\circ 27'$  short of  $90^\circ$ , this involves a possible error of  $2^\circ 54'$  in latitude, a very serious matter if any mariner should happen to be not better informed, upon approaching a coast in foggy weather.

However, not to lay too much stress upon this point, we are told "that latitude  $20^\circ$  is where the pole-star is at  $20^\circ$  and the sun at  $70^\circ$ ." Therefore Fig. II. represents fairly the flat earth and the sun." See Fig. II. and abridged list of cotangents, and by the table he finds that "the distance from the equator to the North Pole is infinite." In Fig. II, "S E is taken as unity," but no reason is assigned; for the argument's sake we accept this; then the distance E A is taken to represent 10 degrees of latitude, the numerical value of which would be found by the ratio .1763 which as the *tangent* of  $10^\circ$  is the comparative length of E A to unity. The tangent of  $45^\circ$  equals unity, and had Fig. II. been drawn accurately, the distance  $0^\circ$  to  $45^\circ$  would have been shown by construction as equal to S E. Now, unity represents the sun's distance from the equator at the point E, which may be taken at the orthodox quantity—roundly 93 millions of miles, which multiplied by the ratio .1763 would give over 16 millions of miles for the distance E A representing  $10^\circ$  of latitude. The *contangent* of  $10^\circ$  is the ratio 5.6713 which means practically that the distance S E would be multiplied by something more than five-and-a-half times, thus giving over 526 millions of miles as the value of  $80^\circ$  of latitude. Not much wonder that our author trespasses upon infinity in search of his 'North Pole!' Such are the results of the attempted application of the trigonometrical ratios for finding the value of distances upon earth's surface, when taking the sun as an observing station. By the orthodox theory all lines from earth's surface to the sun are taken as *practically* parallel: this would apply, as concerning the sun's distance, to the plane equally with the sphere, because the diameter of the equator as a plane circle, may be taken as equal to the diameter of the equator upon a globe! Secondly, there is no necessary connexion between the sun's distance from earth and the extent of earth's surface; therefore there was no reason for taking S E as unity. But latitude being found as a deduction from the observed altitude of an object in the heavens, whose declination is known, it would follow thence that the lines A S, B S, C S, D S, &c., should be taken as unity for the various triangles A E S, B E S, C E S, &c., respectively: and S E would be the *sine* of the various angles E A S, E B S, E C S, &c., and as such, if trigonometry were at all applicable, would show the sun's distance vertically from earth. The distances E A, E B, E C, or B C, C D, &c., as representing latitude, would be base lines in the respective triangles, and of which, the value of one should be a known quantity, then for the others a little geometry and the simplest arithmetic would suffice. But the inapplicability of trigonometry will more clearly appear in connexion with the third consideration, *viz.*, the *utterly condemning fallacy involved in the supposition that all the lines from the points E A B C D E F upon earth's surface to the sun meet at the same point, S.* Now, the  $90^\circ$

by angular measure of latitude have to be projected upon the *radius* of a circle, upon the plane theory. Upon both theories, of sphere and plane, with the sun at equinox, as latitude increases, the sun's observed altitude decreases; the effect of this upon the spherical theory, would be to give all lines to the sun as absolutely *parallel*; but upon both theories whilst the sun is in the zenith of an observer at the equator, it is in the horizon of an observer at the North Pole, or Northern centre; so that the apparent displacement of the sun's position in the heavens is equal to the variation in latitude of the observer, and may equal one side of a square described upon the radius of the equator.

If N Q be the radius of a globular earth, P the North Pole, then the dotted arc P Q would be the  $90^\circ$  of North latitude; at equinox the sun vertical to the equator would be in the direction N Q Q', simultaneously it would be in the horizon of N, *i.e.*, in the direction P S S'; therefore, the sun's *apparent* position varies to the extent of one side of a square described upon the radius; or S Q is the extent of that variation, upon both sphere and plane, when the difference in the observing stations equals  $90^\circ$  latitude.

Therefore, the direction of the lines of observed altitudes do not meet at the same point, hence Mr. Harpur's statement that his "Fig. II. represents fairly the flat earth and the sun," places him in a dilemma; either, whilst posing as a would-be instructor, he evinces special ignorance; or as a prejudiced theorist, he wilfully misapplies known truths (dealing of course with what comes before us, and apart from any approach to personality).

The projection of latitude upon a plane earth presents no difficulty. We take the data admitted by Mr. Harpur as reasonable, *viz.*, "At noon, on March 20th, the sun as seen from the North Pole (or Northern centre) is just on the horizon. This being so, the height of the sun is  $0^\circ$ . At the same time its height as seen from Bordeaux is  $45^\circ$ ." (By Fig. I. Bordeaux is in latitude  $45^\circ$ .) Again, in Part II. "latitude ' $10^\circ$ ' is that part of the earth where, by observation, the height of the sun at noon at the equinox is  $80^\circ$ , similarly latitude  $20^\circ$  is where the sun is (by observation) at  $70^\circ$  (elevation).

In Fig. III. let N Q be a portion of the surface of a Plane Earth; N the Northern Centre to which the "pole of the heavens" is vertical, in the direction N P: Q a point upon the equator to which the sun at equinox is vertical in the direction Q S; then N Q is the radius of the equator, that imaginary circle which bisects the torrid zone. S, the sun, appears in the zenith of Q, in the direction Q S, but it would appear in the horizon of N, in the direction N Q. Hence the variation in the sun's observed altitude as measured upon arc would be  $90^\circ$ . Similarly P in the zenith of N would appear in the horizon of Q in the direction Q N.

The lines which make a right angle may be infinite, *i.e.*, greater than known; hence the lines Q S, Q N, which make the right angle S Q N—also the lines N P, N Q making the right angle P N Q may be infinite: but the distance N Q is limited by the *vertical direction* of the lines N P, Q S; for if N Q were produced at either extremity, then P would not be vertical to N, neither would S be vertical to Q. It will be obvious that the limitation of N Q does not affect the distances N P, Q S, for the vertical direction of these lines would be maintained, though infinitely produced.

Now Latitude—*i.e.* breadth, upon earth's surface, measured from the equator, North and South—is found as a deduction from the observed altitude of any object in the heavens whose declination is known; declination in the heavens corresponds to terrestrial latitude; thus latitude is connected with angular measure. But taking the simplest case, that of the sun at equinox, as the observer's latitude increased, the observed altitude would decrease, so that the latitude and observed altitude would be complementary, *i.e.* their sum would equal  $90^\circ$ . Therefore, as an object cannot have a greater elevation than  $90^\circ$  of arc, nor less than  $0^\circ$ , and as these values result upon observations at the stations Q and N: it follows that the  $90^\circ$  by angular measure of latitude would be projected upon the plane in simple arithmetical proportion of the quadrant of circumference to the radius.

And so reducing observations to construction, we have in Fig. III, if sun's observed altitude at equinox be  $60^\circ$  then the latitude would be  $30^\circ$ , which being  $\frac{1}{3}$  of  $90^\circ$  would be projected at the point A, Q A being  $\frac{1}{3}$  of the radius Q N, the sun's elevation being the angle Q A A'. If observer's altitude were  $45^\circ$ ,  $\frac{1}{2}$  right angle, latitude would equal  $45^\circ$  and be projected at the point B, Q B being half the radius Q N, sun's elevation the angle Q B B'. If observer's altitude were  $22\frac{1}{2}^\circ$ — $\frac{1}{4}$  of a right angle—then latitude would be  $67\frac{1}{2}^\circ$ , and be projected at the point C, Q C being  $\frac{3}{4}$  the radius Q N, sun's elevation, angle Q C C'. At N, the limit of north latitude, the sun's observed altitude would be  $0^\circ$ , it would appear in the direction N Q.

Again, attention may be directed to the inapplicability of plane trigonometry, because it is obvious we do not define the sun's actual position in the heavens by observation, but from its apparent position, we deduce the latitude.

If of interest to your readers, Mr. Editor, when you can allow the space it may be shown that the angles required for finding the latitude are the same for sphere and plane, and are applicable with equal facility upon both theories.

Mr. Harpur's paper is useful as showing how abstract mathematics may be misapplied. Yet he is not more greatly in error than the

Astronomers, who for finding the latitude, regard all lines from earth to the sun as "practically parallel" as the result of the sun's immense distance, but profess to find an angular value—the sun's parallax—when attempting to solve the question of that distance; the truth being, that if proceeding upon the spherical theory, then all lines of direction from earth's surface to the sun are absolutely parallel, the reason being of a simple geometrical nature; and to regard this parallelism as merely "*practical*," and as resulting from the enormous distance, is an evasion of the truth. If the Astronomers do not know this, then they are thereby convicted of ignorance in their special province; if they do know it, then why do they not fairly admit that they have *no positive data for the astronomic distances, magnitudes, or velocities?*

Zealous orthodoxists may find that the plane earth theory is not to be snuffed out of mind by the misapplication of mathematics, nor by counter theory which is founded upon pure assumption.

## THE GLACIAL NIGHTMARE AND THE FLOOD

*"A second appeal to common-sense from the extravagance of some recent Geology." By Sir H. H. Howorth, K.C.I.E., M.P., F.R.S., F.G.S*

"One of the chief objects," says Sir H. H. Howorth, "of this book, is to show that the Glacial theory, as usually taught, is not sound: but that it ignores, and is at issue with, the laws which govern the movements of ice, while the geological phenomena to be explained refuse to be equated with it. This is partially acknowledged by the principal apostles of the ice theory. They admit that ice as we know it in the laboratory, or ice as we know it in glaciers, acts quite differently to the ice they postulate, and produces different effects; but we are bidden to put aside our puny experiments which can be tested, and turn from the glaciers which can be explored and examined, to the vast potentiality of ice in shape of portentous ice-sheets beyond the reach of empirical tests, and which we are told acted quite differently to ordinary ice. That is to say, they appeal from sublimary experiments to a *priori* argument drawn from a transcendental world. Assuredly this is a curious position for the champions of uniformity to occupy."

"I hold that the Glacial Theory, as ordinarily taught, is based, not upon induction, but upon hypotheses, some of which are incapable of verification, while others can be shown to be false, and it has all the infirmity of the science of the Middle Ages. This is why I have called it a Glacial Nightmare. Holding it to be false, I hold further that no theory of modern times has had a more disastrously mischievous effect upon the progress of Natural Science."

"I not only disbelieve in, but I utterly deny, the possibility of ice having moved over hundreds of miles of level country, such as we see in Poland and Russia, and the prairies of North America, and distributed the drift as we find it there. I further deny its capacity to mount long slopes, or to traverse uneven ground. I similarly deny to it the excavating and denuding power which has been attributed to it by those who claim it as the excavator of lakes and valleys, and I altogether question the legitimacy of arguments based upon a supposed physical capacity which cannot be tested by experiment, and which is entirely based upon hypothesis. This means that I utterly question the prime postulate of the glacial theory itself."

We notice that although Sir H. Howorth offers a "widespread flood" in place of the Glacial Theory, he ignores and repudiates the Universal Flood of Holy Writ, and considers it "propriety to leave the Biblical account alone." He quotes from Sedgwick's Paraphrase of Bacon, "the impossible task of equating science and faith." He says;—

"The Pleistocene Flood, though far from being universal, was certainly one of the most widespread catastrophes which the world has seen." "The breaking up of the earth's crust, of which the evidences seem to be overwhelming, necessarily caused great waves of translation to traverse wide continental areas, and these waves of translation as necessarily drowned the great beasts and their companions, including palaeolithic man, and covered them with continuous mantles of loam, clay, gravel and sand, as we find them drowned and covered."

We tell Sir H. Howorth and the whole world of scientists that there is another Nightmare for them to face, in which there is no more truth than there is in the "Glacial Nightmare!" That Nightmare is the Globular Nightmare of Sir Isaac Newton! The world; were it a sea-earth-globe, spinning with seven-fold motion through "space," never could have been flooded; no, not even to the extent required by the theory of Sir H. Howorth! Where did the water come from? Where did it go to? If the water came in the form of rain, how did it overcome the frictional resistance of the revolving atmosphere?

There is no theory extant that has had, and is having, so mischievous an effect upon Natural Science as the Globular Nightmare. It is the fundamental error of all errors in existence, hence the present system of "educating the masses" by "University Extension" schemes, tendeth but to make the nation a nation of rabid infidels.

The science of Geology is but the outcome of the Globular Nightmare, or, Sir H. Howorth could not have spoken of "the breaking up of the *crust of the earth*." It is sad to see those who once were ardent advocates of "a vast and *universal Flood*" cringing before the geological idol of supposition, and pleading on its behalf for "a greater latitude of interpretation of Scripture," or, "some modification," or, "a little concession on the part of literal interpreters." We remember that it is written in the Scriptures of Truth, "he that believeth not God, makes

Him a liar." Until Geology, Astronomy or Evolution, can produce some distinct and conclusive proof of truthfulness; and by consequence, unmistakable and irrefutable evidence against the Mosaic Cosmogony, we shall testify against their systematized theories as the vain janglings of so-called scientists.

"TAKE HEED WHAT YOU HEAR."

## THE BOASTED ACCURACY OF MODERN ASTRONOMY EXPOSED.

By Thos. Geo. Ferguson.

The Science of Theoretical Astronomy makes a boast of its accuracy, and as it is best to "prove all things" a few of their statements shall be put to the test to see if they have any right to the claims they make, viz:—"that Astronomy is the most exact of all sciences."

Sir Robt. Ball tells us in his *Story of the Heavens*, p. 510 (1893 Ed.):—"We can determine the place of a planet with such precision that it is certainly "not one second of arc wrong," and he goes on to explain that "a foot rule placed "at a distance of 40 miles subtends an angle of a second, and it is surely a delicate "achievement to measure the place of a planet, and feel confident that no error "greater than this can have intruded into our result."

The accuracy they vaunt so loud speedily disappears when the statements of two or three of the most "eminent astronomers" are compared with each other! For instance, if we start with the problem which nearly all modern astronomers agree is the most important throughout the whole range of astronomy, viz:—The sun's distance from the earth, we shall see what diversity of opinion (absolute contradictions—Ed.) exist amongst them, so much so, that hardly any two of them agree about it. The late Mr. Proctor stated it was 91,500,000 miles, but Sir R. Ball gives it as 92,700,000. Surely a difference of 1,200,000 miles is not the "precision" Sir R. Ball speaks of in his work from which I have quoted?

Again these distances differ very considerably from those given by other "eminent astronomers":—Copernicus gave it as 3,391,200 miles; Kepler, 12,376,800; Newton (1st guess) 28,000,000; Newton (2nd guess) 84,000,000; Herschel, 95,000,000; Gould, 96,000,000; Cassini, 112,000,000; Mayer, 184,000,000.

Mr. Proctor in the opening remarks of his book *The Sun*, says:—"The determination of the sun's distance is not only an important problem of general astronomy "but, it may be regarded as the VERY FOUNDATION OF ALL OUR RESEARCHES."

How very far from accuracy must that science be which has such an *uncertain foundation*? If modern astronomy depends upon the accuracy of the sun's distance from the earth, then we are justified in saying that it is built on a sandy foundation, for, as we have seen, the astronomer's theories about it, are against themselves.

Let us now glance at their theories about the planets, and I trust the reader will, from their own text books, compare the diameters and distances as given by the most "eminent astronomers." I shall only give one instance as a sample. Saturn's mean distance from the sun, as given in Sir R. Ball's *Story of the Heavens*, is 884,000,000 miles, and the diameter 71,000 miles. Prof. Lockyer gives its

distance as 880,000,000 miles; a difference of 4,000,000 miles. Prof. Olmsted gives Saturn's distance from the sun as 890,000,000 miles, and the diameter of Saturn as 79,000 miles. Others could be quoted equally at variance. Where, we ask, is the accuracy of this "most exact of sciences?"

No doubt some will say, "Well, how do the astronomers foretell the Eclipses. &c., so accurately?" This is done by cycles. The Chinese for thousands of years have been able to predict the various Solar and Lunar Eclipses, and do so now, in spite of their disbelief in the theories of Newton and Copernicus. Thomas Keith in his "Treatise on the use of the globes" says:—"The Cycle of the moon is said to have been discovered by Meton, an Athenian, B.C. 433," when, of course, the globular theory was not dreamt of. After a period of 18.6 years, the moon recommences precisely the same spiral path around the earth in relation to the sun, and so the Eclipse of the moon, which takes place on September 29th, will again occur in 18.6 years. We find in no other science (save perhaps Geology) such differences of opinion and such opposite statements existing amongst its professors, as among those of modern astronomy. Algebra, Arithmetic, Euclid or Geometry, may be called exact sciences, but certainly not modern theoretical astronomy.

That there are difficulties in connection with natural phenomena is not doubted, and that there are good men in the ranks who support these theories we do not deny, but we are prepared to show that at the outset assumption is called Fact, and consequently a multitude of errors have crept in which it is the duty of every lover of truth to warn people against and to expose. We may be thought to be fault finders, and had better be so-called than let falsehood reign and permeate society without an attempt to expose it. All we ask is that everything stated may be brought to the test of practical facts and common sense, then the truth will soon be evident. We have but very briefly touched this subject, but sufficient, we hope, to cause our readers to think, and to examine the matter for themselves.

## OUR OBSERVATORY.

"ERROR IS ALWAYS INCOHERENT."

### THE DAWN OF ASTRONOMY.

A Study of the Temple Worship and Mythology of the Ancient Egyptians. By J. NORMAN LOCKYER, F.R.S., &c.

"This book, ambitious in object and pretentious in style, seems to us to prove no more than that a distinguished astronomer may be wholly ignorant of the history of his own science, and that familiarity with the weights of the sun and stars do not necessarily imply the power to weigh evidence. Mr. Lockyer's acquaintance with the spectroscope does not enable him to know better than Homer what the ancients felt about the circumpolar stars, nor to contradict Archimedes on the question whether any one of old suspected the revolution of the earth round the sun. As it is wholly impossible within our limits to criticise a tenth part of Mr. Lockyer's arguments, we shall begin by calling attention to one or two of the assumptions—throughout presented by Mr. Lockyer, not as assumptions, but as ascertained facts—[shame, Ed.] on which pages and pages

of these arguments depend. With their exposure it seems to us that no small part of Mr. Lockyer's sandbuilt structure falls at once to the ground.

In the course of an attempt to show that an inscription, which attributes the laying of a foundation-stone to Augustus, really means that the stone was laid in 5000 B.C., Mr. Lockyer is obliged to construe a reference to the Great Bear as a reference to a particular star in the Great Bear—namely, *a* or Dubhe. This explanation rests entirely on the assumption that *a* is the brightest star in the Bear, which Mr. Lockyer more than once tells us in plain language is the case; while once, as if to prove his knowledge of the past as exhaustive as his acquaintance with the present, he speaks of “Dubhe, the chief star in the Great Bear in the time of the Ptolemies.” Who could suppose that in this pretentious phrase Mr. Lockyer was speaking purely at random? Yet such is the case. At present the unaided eye cannot detect in Dubhe any superiority to two at least of its fellows, while modern photometric estimates are equally blind to its pre-eminence. Does Mr. Lockyer's flourish about the Ptolemies mean that we have any reason to think the star was brighter of old? Not in the least: we have absolutely no evidence on the subject older than the catalogue of stars in the *Almagest*, and here the chief stars in the Bear are marked as equal.

A far more important assumption of Mr. Lockyer's is that he can tell what stars composed the Egyptian constellation of the Hippopotamus. He pretends to know its principal star, and gives us the date at which the group ceased to be circumpolar, though this, of course, can be known to no one who does not also know what were the precise limits of the constellation. Mr. Lockyer is as ignorant of this as the rest of the world, and does not even venture to offer any arguments in support of his opinion, except the statement that Brugsch and Parthey agree with him, and even this statement is not correct. Dr. Brugsch has indeed hazarded the guess that the Hippopotamus was the modern Dragon; but Mr. Lockyer, while repeatedly giving out this opinion as his own, is obliged, in the interests of his argument, to make the Hippopotamus answer only to a small part of that constellation, in fact to little more than the Dragon's head. Our space does not allow us to refute Mr. Lockyer's theory of the Hippopotamus, but we must point out that it is flagrantly inconsistent with another of his favourite doctrines. He assures us that the Egyptians made star-maps, and that one of them has come down to us in the shape of the famous “round zodiac” of Denderah. Now, if this curious planisphere, on which the star Sirius is represented by a good-sized cow, and the planets take up as much room as the zodiacal constellations, is to be accepted as a star-map, it follows that Mr. Lockyer's own theory of the Hippopotamus is wrong. The slightest study of the monument will show that, if it is to be taken seriously, the Hippopotamus was a

huge group, which can never at any time been wholly comprised within the narrow circumpolar heaven of Egypt.

Some of Mr. Lockyer's arguments rests on the belief that this Denderah zodiac, made, as every one now admits, in Roman times, is what Biot long ago *supposed* it to be, a faithful representation of the heavens in 700 B.C. This strange belief testifies, not indeed to his study of Biot, but only to his omission to study Biot's successors. It is enough to point out that the monument represents Mercury and Venus in positions which they can never have held, with regard to each other, since the creation of the world. Such, then, being the nature of the evidence on which Mr. Lockyer's theories rest, what are we to say of the theories themselves? The advantages of having a temple so constructed as to serve at the same time as a telescope, when the temples were orientated, as Mr. Lockyer says they were, to the rising and setting places of stars, are more apparent. We read of nocturnal services conducted in total darkness until the sanctuary was suddenly lit up by the radiance of a single star, rising behind the backs of the astonished worshippers opposite to the open door of the temple. It is surprising that the only evidence cited to show that so impressive a ceremony ever did—or could—take place, is a passage from Herodotus describing “the ceremonials and mysteries” of a temple not in Egypt, but at Tyre. But it is still more surprising to find that Mr. Lockyer has rested his whole case on a passage which *he has not verified*. (We should like to see *anything* that Mr. Lockyer *has ever verified* Ed.). For Herodotus says not a word about mysteries and ceremonials, and makes not the smallest allusion to anything wanting explanation, whether by stars or otherwise.

The telescope-temples were also built to observe the “cosmical” rising of stars, that is the rising of a star at the same instant with the sun, when, according to a belief until now universal, it is invisible. We need not inquire whether such a thing could be done. Mr. Lockyer's own evidence shows that it was *not* done. For many temples, according to him, were orientated to the star Spica, which being close to the ecliptic must, when rising or setting at the same time with the sun, have also risen or set almost in the same place with the sun. Mr. Lockyer himself would not contend that his darkened temples would show Spica or Regulus under these conditions; yet he tells us that all the temples are constructed on the same principle, and a construction which in some cases is certainly meaningless must be taken to be meaningless in all.

Is there then any reason to believe that Egyptian temples were ever orientated to stars? We are at least sure that Mr. Lockyer has not furnished any. It proves nothing that he has been able to draw up a list of temples directed to points of the horizon where this, that, or the other star has at some time risen or set. It results from the law of the precession of the equinoxes that all the stars are slowly altering their

distances from the equator, and therefore that their rising-places are slowly changing.

So far then as those many temples are concerned, the dates of which are wholly unknown to us, the fact that Mr. Lockyer can find stars to suit them does not afford the least presumption that they were built at the time when the stars were suitable. His theory can only be tested by those temples of which we do know the dates at least approximately. Now there are certainly a few cases where a temple would, about the time when we believe it to have been built, have had a star rising in line with its axis; and over these cases Mr. Lockyer is so jubilant that he confidently asserts the object of the temple's erection, and the condition of its use, to have been the admission of light from that very star. What then of those much more numerous cases where the temple appears to have been built at the time when there was no star to send its rising beams along the axis? (How can a star "send its *rising beams* along the axis," when it takes its light 3 years to reach the earth? Ed.). With amazing inconsistency Mr. Lockyer replies that such a temple is doubtless a restoration of some older one, built originally when some star did shine down it, although such a restoration must, on his own principles, have been absolutely useless. It seems never to strike him that, if this theory be right, then the other theory, that the direction is the essential part of the building, is wrong. Most amazing is this inconsistency in those very few cases, on which he so often insists, where he claims to find *proofs* that existing temples actually have been altered or rebuilt to follow a star. Mr. Lockyer, rashly following Mr. Penrose, contends that the Greeks, too, orientated temples to stars, and rebuilt them, even the Parthenon itself, to follow the stars in their movements. Of this Greek habit, therefore, the Greek astronomers were not aware. Stranger still, it appears from the silence of Vitruvius that the Greek architects were not aware of it either. It is scarcely probable that a secret so jealously kept should have been surprised by Mr. Lockyer. But if Mr. Lockyer's methods have led him, in the case of Greek temples, to a manifestly wrong conclusion, why should any one suppose that the same methods have guided him, in the case of Egyptian temples, to a right one? (We are reminded of the "methods" of the Professor to prove the world a globe. Hush! It was "a fly on an orange," Ed. E.R.)

From *The Guardian*, July 4th, 1894.

From SIR JOHN LUBBOCK'S *Beauties of Nature*.

Wherever ships have sailed southwards—except at a few places when land has been met with—they have come at last to a wall of ice, from 50 to 400 feet high.—p. 366.

The condition of the arctic region is quite different, there is much more land, and no such solid cap of ice.—p. 377.

### The Contents of Our Letter Box.

Dear Sir.—*All Past Time* will be ready in six weeks hence. The enclosed is a "proof" of a stereotyped page, in which I have alluded to you and given your address. I have since learned that Mr. Albert Smith has retired from the post of Editor.

The past twelve months have been a very successful period, in respect to astronomical chronology, and the new issue will contain much more information than I have previously published. All discoveries confirm Biblical history. A very fortunate discovery has been made by Mr. Pinches, the cuneiform reader at the British Museum. He finds among some hundreds of baked clay tablets, which came from Babylonia, one which gives all the Kings of Babylon from the beginning of the kingdom to its end. The number of years reigned by each monarch is given, and also how many years such dynasty lasted. The result is, the kingdom began about two years after the confusion of tongues at the Tower of Babel. The first King, Sumu-abi, reigned 15 years. He was probably a son of Nimrod. I have printed the whole of the tablet on the principle of A. M., years. Whatever differences exist between us, respecting the true system of astronomy—and I find some clever and pious men holding yours—we must all rejoice that the Bible is such an excellent and *precise* book. [Hear, hear, Ed.]

The *New Era at Hand* is doing well and is highly spoken of.

July 15th, 1894. J. B. DIMBLEBY.

[The books of Mr. Dimpleby we commend to the readers of these pages. They can be had from the Secretary. See list of publications.]

We regret that Mr. Dimpleby is not a pianist, and as this question is one of vital importance to him, in connexion with his system of chronology, we do most certainly consider that he is bound to look this subject fairly in the face and decide who is on the side of truth, with regard to the shape of the world. Our

love of truth leads us to here tell him that his system of chronology is marred by the pagan idea of a revolving globe before a fixed sun, and until he has a fixed dial plate, with a large and small finger (the sun and moon), marking the time thereon, his system of chronology will, *in measure*, be anti-scriptural.

Biblical chronology should be based upon the unchanging fiat of the Almighty designer of the clockwork of the heavens, who in Genesis i, 14, says, "let them be . . . for days and years."

In the presence of this fiat of Almighty God, what becomes of the fiat of Sir Isaac Newton, upon which the whole system of modern astronomy is founded? "The sun is the centre of the solar system and *immovable*." What becomes of the fiat of that "gifted man whose book has won much attention," Mr. Gillespie, and who says "the sun apparently revolves above the earth in a path similar to the figure 8" (?). Every sundial incontestably proves that statement to be false, to bolster up an unfounded theory.

The Zetetic School of practical science teaches that the first chapter of Genesis is literally accurate *in every point of detail*, while the systems of Sir Isaac Newton, or Mr. James Gillespie, are a direct contradiction of it, and, therefore, the support of blantant infidelity, and rebellion against God, in the rejection of His Holy Word, hence we find G. W. Foote asserting that "the Bible gives a false account of the origin of the world; a foolish account of the origin of man, &c."]

BIRMINGHAM. Photography of the heavens will do a good deal for us. It is marvellous what it has done for us at sea. I have seen a photograph of the sea stretching considerably more—from point to point—than twenty miles. As they cannot play any hankey-pankey tricks in this matter the sea must be what the photograph rep-

resents it, and that proves it to be horizontal; the horizon line is as straight as any line can possibly be drawn. Can any evidence be stronger than this to shew conclusively that there is no sea curvature? It seems to me that anything can be made of the so-called "Bedford Canal experiment;" but the photo of the sea settles the whole business. It requires not a word to *explain* anything—there it is for anyones eyes to see, if they will but use and believe them.

A. W.

LIVERPOOL. The Scottish Geographical Magazines from January to April, contains articles on Antarctic Explorations. A Committee are doing their best to induce the Government to assist in sending out a first-class exploring party to those regions. In the No. for March, a statement is made that among other results it would decide as to the "figure of the earth," p. 148.

W. BATHGATE.

This is certainly a tacit acknowledgement that the figure of the earth is *not known by them*, and, consequently, is a justification of our position and teaching! The surface of all water at rest is an horizontal plane, therefore the question is *practically settled*, all that is required now is an honest acknowledgement of the fact. ED.

HALIFAX. Dear Sir,—I went to the British Museum yesterday.

"The Campaignic Universelle," &c., by Lesseps, was out being bound. I got the "Report of Isthmus of Suez," Report and Plan, 1857. From the British report I extracted the following—

(p. 20) "Between the Red Sea and Persian Gulf running from N to S, there is a depression in the soil very distinctly marked, especially in crossing from the bitter Lakes to Lake Tinsah . . . But excepting two tracts of land rising 39 to 49 feet in height, and of *very limited extent*, at the point above mentioned there is a sort of *thalweg* or *nearly horizontal* course across the entire breadth of the Isthmus."

(p. 46) "In 1830, Captain Chesney asserted that the French Engineers must be mistaken (in a previous survey where they had stated that the Suez at high tide was some 150 feet above the Red Sea). Chesney said he had travelled across the Isthmus and explored in several directions and this difference of level could not exist. A party of English officers (1840) surveyed the Isthmus and declared that *the level in both seas was identical*."

Now as to "Silting," on p. 23-24. Lempere, in his scheme, says—"I fear the Silting which the winds from the N. W. may produce." So you see he does not account for Silting on the ground of rotundity.

JNO. S.

LAVENDER HILL. I am exceedingly charmed with "Parallax." The more I read it, the more deeply interested do I feel, and though you cannot turn a thinking mind over to your side in fifteen days (the time the book was lent for), it will give me reflection and mind food for years.

The great reason why people do not care for astronomy, is, because their definitions are not understandable, for *they say one thing and mean another!* No sane man can understand their immense distances; no, not even themselves! If astronomers are not ashamed of what they teach, why don't *they* issue a weekly paper at a penny, one that the world can understand? Surely they could afford to do this, seeing the thousands upon thousands we pay them yearly, and what for?

E. K.

BARKING. I herewith return the pamphlet, *Bedford Canal not Convex*, with many thanks. I have kept it rather longer than I intended, because I wanted to read it carefully. I am quite satisfied that those who claim the earth to be a globe, have no right to use the experiments criticised in the pamphlet as a proof of it.

C. W. A.

ONTARIO. I have found out a new method of proof that the earth and ocean constitute a great circular plane, the region north of the equator being smaller and more central, the region south of the equator larger and of greater circumference. The method of proof is arithmetical based upon the variation of daylight, its increase and curtailment at different latitudes. It is simple, cogent, and irrefutable.

J. T. L.

[Let us have it. ED.]

WILLIAMSTOWN. Dear Sir,—Packet of books and pamphlets to hand. Many thanks for them. They are lucid and convincing, and are already in circulation. The demand for them is surprising. I

have been begged for the loan of your books by Non-Christians and Infidels, as well as by thinking Christians, and I trust much good will result. One man said—"I never did believe the earth was a globe. I have been a sailor nearly all my life, and in the South Sea Isle built several houses and always levelled them by the horizon. This I could not have done had the world been a globe." The encouragement met with makes me wish I could afford to send for a second supply; however, I must be content to wait for two or three months before doing so. Others have expressed their determination of sending for pamphlets; but, as I daresay you know, Victoria is suffering from wide-spread depression.

A. L.

### The Zetetic's Open Column.

The questions in this column are open for Zetetics to reply to.

QUESTION (1). *How do astronomers know the distance, dimension or volume of the stars—say Sirius? How do they know the rate of speed at which the light of heavenly bodies reach the earth?* H. J. RANSOME.

ANSWER (1). They do not "know" anything at all about the substance of either of your questions.

Guillemin (The Heavens, p. 341) says, "if we *suppose* that the intrinsic intensity of the light be the same for Sirius, as for the Sun of *our system*, we shall arrive at pretty clear, if only *conjectural*, views of the dimensions of this magnificent star. On this hypothesis the diameter of Sirius would be fifteen times that of *our sun* . . . the dimensions five times, and its volume 125 times."

He conjectures that light travels to the earth at the rate of "192,000 miles a second." Mr. Leon Foucault conjectures "184,000 miles a second." Sir Robert Ball, "180,000 miles a second." The Editor of *Science Siftings*, "186,000 miles a second;" but he contradicts this

by another conjecture of "196,000 miles per second!" This is all contradicted by a writer in the *English Mechanic*, (July 27th, 1894), who says, "I believe no one now holds the view that light *actually moves*."

A country lad was once taken to hear an eminent astronomer lecture on the distance of the stars from the earth. In the course of his learned lecture he stated that the distance of some of the stars from the earth is so great that the light which now reached us from them must have taken from the days of creation to travel so far. "What do you think of that marvellous fact, young man?" asked his friend. "Law, sir! what a big lie it do be, to be sure," responded Hodge. Poor Hodge, he evidently was not in possession of the "scientific mind," therefore was utterly unable to grasp "that marvellous —."

QUESTION (2). What is the cause of the extremes of temperature and weather in America in latitudes similar to our own where the conditions are comparatively regular and uniform? J. ATKINSON.

### Answers to Correspondents.

All letters to the Editor should be briefly and LEGIBLY written on one side of the paper only. They *must* be accompanied by the name and address of the writer, as a guarantee of good faith. Where replies are requested by post, the postage must be enclosed. The Editor does not hold himself responsible for the opinions expressed by correspondents. All letters *must* be prepaid and addressed to

LEO CASTLE,  
c/o Mr. J. WILLIAMS,  
32, Bankside, LONDON, S.E.

W. CARPENTER.—We regret that your communication—forwarded to us by the late Editor—does not answer the requirements of the Society, on the subject which we desired to make public in these columns. "Public opinion" is turning in our favour. We are hoping to re-issue the pamphlets you mention, but who will help us?

"TRUTH."—Thanks for "scraps," send all you can. See "Our Observatory."

J. ATKINSON.—The late Editor sent us your "Popular Fallacies"—beg pardon, we mean someone else's. In our next. Thanks for cuttings, &c.

W. M. RUNCIMAN.—We regret, that, after advertising for two months, you cannot find a man in New Zealand to openly defend the globular theory! Did the "chief authority on astronomy and cognate matters for the last 30 years in New Zealand" see your challenge? In a letter from him, which we saw (!) he said, "I never met but one member of the sect. I thought they died with the illustrious John Hampden." You might send him a challenge and a Review, just to dispel his fears about our death. His address is Mr. A. Beverly, Heriot Row, Dunedin.

J. C. AKESTER.—According to the highest Zetetic authority, the moon shines with *its own light*.—Matt. xxiv. 29. Whatever evidence contradicts that, is not the outcome of practical investigation.

T. WHITTLE.—"Gravitation," and by consequence "the law of gravitation," has no existence in the Universe. Professor W. B. Carpenter, C.B., F.R.S, in his paper, *Nature and Law*, says—"THE DOCTRINE OF UNIVERSAL GRAVITATION IS A PURE ASSUMPTION." A contemporary science paper informs us that "the history of science shews that ALL THE GREAT LAWS OF MATTER HAVE BEEN DISCOVERED, NOT BY DEMONSTRATION, BUT BY IMAGINATION." Read the article in E. R., No. 2, p. 15, on "The Mystery of Gravitation." As soon as we can, we shall print a series of articles on "gravitation." We are watching its workings in the "scientists'" minds. Our "Open Column" will meet your suggestion.

ULYSSES, G. MORROW.—We have received a letter sent by you to the late Editor. We hope to print a great part of it in our next. Thanks for your kind offer to prepare articles, with cuts, for this Journal. We shall be most happy to receive them. There is much, of course, in your "Electric System" with which we are in full fellowship, but we fear that there is much in it that is only speculation. Still, as Zetetics, we fear not to look into anything professing to present *practical truth*. We should like to see your proofs of an "Enspherical World,"

and what supports it in space? This we take to be the fundamental point in your system, therefore, it should be made *unmistakably plain*.

A. MCINNES.—Thanks for your letter which shall appear in our next issue. By that time we hope to find your name enrolled on the Society's books, as a Member, or Associate. No Journal can exist apart from financial support; if it is worth writing to, it is worth supporting financially.

THOS. WINSHIP.—Thanks for your letter and cuttings from *Cape Argus*. Hope you have received letter and pamphlets, forwarded.

E. M. MANSELL.—(1) Yes, we do know who the "competent disciple of 'Parallax' is, that tried and failed to prove that the earth is flat." We do not wonder that you do not believe it. (2) No, he is not a member of the U. Z. S. (3) Yes, we wrote instantly to the President of the Leeds Astronomical Society, who kindly informed us that the lecture was given on March 1st, 1893. (4) The pages of this Journal are always open to any astronomer, or geographer, who can *prove* the world to be a globe. (5) We consider that their silence is the evidence of their utter inability to prove their case!

E. BREACH, C. S.—Thanks for pamphlet.

ZETETES desires us to notify that he has removed to 23, East Park Road, North Evington, Leicester.

I. S.—"At Greenwich Observatory they publish high-water mark at Greenwich and Liverpool. The difference is only about 1½ ft. How is this? The distance is 200 miles." Could you not write to the Astronomer Royal and ask him the question, and send us his reply for publication? Perhaps it is the same kind of a mistake as they made about the height of the Atlantic and Pacific Oceans. It now turns out that "the Atlantic, and not the Pacific, is the higher of the two Oceans, and in place of the difference in level being hundreds of feet," as has been affirmed, "the surface of the water in the Atlantic is *exactly* six feet and a half higher than it is in the Pacific!"

MR. PERRY delivered two lectures at the Ashton Temperance Hall, and gave, as one proof that the surface of water is horizontal, the fact that Mount Egmont, 8,838 feet high above sea level, was discernable from the deck of vessels at sea a distance of 160 miles. Other proofs were given, illustrated by diagrams.

N. B.—Replies sent to our "Open Column" must *not exceed* 200 words.

Will Members, whose Subscriptions are due, kindly forward them to the Secretary with as little delay as possible.

This Journal will be forwarded to any address, for twelve months, on receipt of 10d. in advance. Address Secretary.

### A SUN SPOT.

"The Detachment of a sun-spot is the origin of a planet." ENGLISH MECHANIC.

"The earth is a planet," i.e. an old worn-out sun-spot, which the sun having no use for, threw off its face into "infinite space," where it revolved, until it evolved into a fire planet with a "crust," from which astronomers view its old parent's face.

BALAAM'S ASS.

## A PRACTICAL MAN ON PROTOPLASM.

A Member of the "Mutual Admiration Society," and an enthusiastic admirer of Professor Huxley, called on a friend to invite him to come and hear the Professor on Protoplasm. He spoke so extravagantly about him that his friend finally became curious, and asked—"Who in the world is this Huxley, anyway?"

HUXLEYITE.—"You don't mean to say you have not heard about Professor Huxley, the great scientist?"

PRACTICAL MAN.—"Yes I do though; never heard his name before; what has he done?"

H.—"Why, man, Huxley made the important discovery about Protoplasm."

P. M.—"About what? Protoplasm? And what in the name of common sense is Protoplasm?"

H.—"Now look here, you don't mean to sit there and tell me you don't know what Protoplasm is?"

P. M.—"That's just it. Can you tell me what is Protoplasm?"

H.—"Well, Protoplasm is—yes—is—well—what we call 'the life principle.'"

P. M.—"O, I see! It's something to do with life insurance societies, and Huxley is a successful canvasser, eh?"

H.—"O, nonsense, it is the life principle in nature—the starting point of vital action."

P. M.—"O! he discovered that, did he?"

H.—"Yes, he discovered it some years ago in England."

P. M.—"And what good is it a going to do?"

H.—"Good? A great deal of good. It expands the circle of human knowledge, and is valuable in bearing out the theory of Evolution. It is a noble and most important contribution to science, and it has made Huxley one of the few immortal names that were not born to die."

P. M.—"So Huxley knows all about the life principle, does he?"

H.—"Yes, *all* about it."

P. M.—"And the starting point of vital action?"

H.—"Yes, *all* about it."

P. M.—"Well, see here now: can he take some of that Protoplasm and make a man, or a horse, or an elephant with it?"

H.—"O no, of course he couldn't do that."

P. M.—"Can he take it and make anything at all of it—even a gnat or a fly?"

H.—"O no, of course not."

P. M.—"Well then, Huxley may just go to Jerico with his Protoplasm. I don't believe its worth two cents a pound, anyhow. It appears to me those scientific fellows put on a big lot of airs about very little things. Protoplasm, eh! Shouldn't wonder if Huxley came over here to get up a company to work it. I tell you what it is, my friend, its a swindle. Did you say the mine is in England?"

EXIT HUXLEYITE.

Yankee Judy.

## THE EARTH—NOT A GLOBE—REVIEW.

*When the majestic form of Truth stands before the bar of justice,  
that hideous monster, Error, hangs its head in silence.*



"Parallax" Experimentally Proving Water to be Horizontal.

NO. 2 (NEW SERIES).

JANUARY, 1895.

PRICE 2D.

## THE PRETENSIONS AND PRETENCES OF MODERN ASTRONOMY.

*By James Naylor.*

*(Concluded.)*

Now it is impossible not to see as these pretences are pointed out, that Kepler's first law is a palpable absurdity, and one is irresistibly reminded of the definition of the crab, said to have been given by the French lexicographers "as a large red fish, which walked backwards!" This definition on being submitted to Cuvier was stated by him to be PERFECTLY CORRECT, except that the crab was not large, was not a fish, was not red and did not walk backward! So with Kepler's first law "that the planets revolve in elliptical orbits, the sun being situated in one of the foci." This also is "perfectly correct," except that the planets do not revolve, do not move in orbits, do not describe ellipses, and do not have the sun occupying their common foci. The lexicographer's definition of the crab was absurd, and Kepler's first law is equally so. Of course it can be replied to our position that the law holds good IF THE SUN IS SUPPOSED TO BE STATIONARY, and such a supposition it is alleged enables the planetary motions to be much more easily apprehended. But this argument practically gives itself away. It justifies our charge to the letter, viz., that the commonly taught doctrines of the planetary motions are but a gigantic pretence, put for a set of conditions with which they have no common agreement. A simple illustration will make the absurdity of the argument perfectly clear.

There are a number of persons going along the road, and while one in particular keeps straight forward, the rest proceed irregularly, being sometimes to the right, sometimes to the left, then to the front, and yet again to the rear of him. These movements well illustrate the astronomer's teachings as to the motions of the sun and the planets. Now