

CONTENTS OF OUR LETTER BOX.

Halifax.

DEAR LEO CASTLE,—I am glad to hear of the American experiments proving "Parallax" right, as they must of necessity for truth is unchangeable and P. was certainly right in his determination of Earth's position and water level, *i.e.* horizontal. I can't help but feel regret that our old friend and champion, Carpenter, has passed from our midst. I shall ever respect his memory as one who loved the truth as he found it in the word of God and in Nature. Let him have a place in our next issue, and our sympathies as a society deeply expressed to the bereaved widow and family. He was a practical, consistent, constant and enthusiastic Zetetic. Would to God there were thousands like him. [Here, here, Ed.] Kindest regards, from all to all, hoping soon to see you.—Yours as ever,

JOHN SMITH.

The American experiments referred to will appear in our columns as soon as possible.—ED.

DEAR SIR,—I was indeed most sorry to hear of Mr Carpenter's death. We were early friends of the Zetetic cause, and it never had a more sterling or a cuter critic than he. His book "Common Sense" on Astronomy as a piece of negative criticism has never had, and probably never will have, an equal much less a superior. JAMES NAYLOR.

DEAR SIR,—I sincerely hope the *Earth Review* will continue to appear monthly. The quotations in the Articles on Gravitation are very valuable. The letters, "declined with thanks," &c., are also very interesting. Newspaper editors are

evidently afraid to assist in the exposure of the forlorn condition of modern astronomy by publishing them. How much longer are our great "Scientists" going to keep up the farce of pretending to be united in opposing all anti-Newtonian views? "Parallax" refers to the "smouldering scepticism" which they have induced in the hearts of Christian and Jewish believers, but it may well be perhaps that, although not condensed to their opponents, or even to each other, this same "smouldering scepticism" actually exists deep down in THEIR OWN HEART. The damaging admissions and confessions made by some of the more candid and honest amongst those who are considered to be in the front rank of "Science," which the *Review* so usefully brings to the notice of the public from time to time, indicate the dry rot of long standing which (because mostly hidden from, and therefore not suspected by, the latter) works silently and inevitably to the coming great revolution in science which is probably nearer than any have imagined, when this lying and monstrous system of astronomy, impudently labelled "the most exact of the sciences," will collapse all along the line—suddenly, and without remedy! The sneers and defiance hurled by them at those who maintain the Planeist truths are thus by no means to be considered as the measure of *failure* of the work of the Zetetic Society in undermining the astronomical "articles" of Newtonian "faith." How often does seeming failure and defeat turn out to be victory—*absolute and complete*—AFTER ALL!

JOHN BRADLEY.

EDITORIAL NOTICES.

Please to ask for "The Earth—not a Globe—Review," at all Newsagents, Reading Rooms, and Railway Bookstalls. To be had direct from the Hon. Sec., post free, to any address in the postal union for 1s per year, in advance.

All monies for the Society must be paid direct to the local Vice Secretaries, or direct to the Hon. Secretary and Treasurer, John Williams. Post Office Orders to be made payable at Sumner Street, S. E.

—THE—
EARTH—NOT A GLOBE—REVIEW.

SIX MILES.



"Parallax" proving the Surface of Water to be Horizontal.

Vol. IV.

Jan. - March / 1894.

HORIZONTALITY DISPROVES CONVEXITY.

The *practical demonstrations* of "Parallax," the founder of Zetetic Astronomy, were no hole and corner doings. Many similar experiments have been made by others over canals, rivers, seas, etc., in various parts of the world, and all confirm the fact, the surface of all standing water, or water at rest, is horizontal.

ERGO.

The world is *not* a rotating globe and we living on the outside held on by "gravitation," neither is it an "hollow sphere" and we live inside of it on a concave surface.

The various systems of theoretical science, viewed either from a common sense, a practical, or a Scriptural standpoint of criticism, prove themselves by their own self-stultifications and contradictions to be utterly untrue! And the only object of exponents appears to be nothing more or less than self-aggrandizement. Their silence when challenged for proofs of their theories proves the fallaciousness of their teaching and their consciousness of the fact.

Preachers, lecturers, and all intelligent and practical men in the world should be interested in this discussion. Ignorance of real facts is a disgrace to our pretended civilization and a slur upon our Christianity, and can only be obliterated by an honest and candid yielding through practical investigations to the claims of the voice of God in Nature. This mode, and this alone, will, or can strictly accord with and confirm the utterances of Holy Writ, proving thereby that the God of Nature is the God of the Bible, and that they are the voice of the Lord our God speaking unto us, and teaching us His Truth.

THE OLD BEDFORD CANAL AND SOME THINGS THAT CAN BE SEEN THERE.

We think that even the most ardent believer in a plane earth will admit that the results of the Wallace-Hampden experiments, superficially viewed, were unsatisfactory. However much, when examined beneath the surface, they proved standing water to be horizontal, on the face of it they appeared to prove otherwise. The distant signal undoubtedly seemed below the nearer one, and as this appearance in some form or other would be the case with a globular earth, evidence for the latter appeared clearly to be established. Even we, who at the time critically reviewed the experiments to prove the fallacy of the conclusions arrived at, felt that the cause of the appearances was not a matter of certainty, but only one of conjecture and probability. It was therefore with readiness that we accepted a kind invitation in August, 1894, to take part in some experiments on the Old Bedford Canal, of Wallace-Hampden fame. The experimental party was well provided with numerous instruments, including a surveyors theodolite, Dumpy level, telescopes, &c. The results clearly established to all present that the surface of the water in the Old Bedford Canal at any rate does not decline in any part of its course from a right or horizontal line starting from the point of observation, and therefore that standing water is not convex but horizontal. With the general results of the experiments we are, however, at present not so much concerned as with some particular ones in which we more intimately participated. It is a description of these which we now propose to lay before the readers of the "Earth Review."

At the time of the experiments it was unfortunate that the weather during the whole of our four days' stay was unsatisfactory. It was only during brief spells of fairly bright weather that any experiments could be made at all, and it was upon one of these occasions that the following phenomena bearing upon the Wallace-Hampden experiments manifested themselves. We had been using a terrestrial telescope, and found that when truly levelled from the parapet of the Old Bedford Bridge, Welney Bridge, six miles distant, always appeared in or near the centre of the field of view. In fact it required a distinct variation from the level to make Welney Bridge appear in the lower part of the field, and as would be the case if the Old Bedford Canal was part of a globe of some 4000 miles radius. Having, by repeated experiments, verified the statement just made, we turned our attention to the surveyor's theodolite. This was a truly grand instrument, possessing levels for both the transverse and longitudinal directions, together with vertical and horizontal cross hairs similar to the instrument used by Professor Alfred Russell Wallace.

We levelled the theodolite in the direction of Welney Bridge, and were at once struck with the fact that the bridge appeared considerably below the horizontal cross-hair in the field of view, showing the same peculiarity, in fact, as the instrument used by Professor Wallace. But this was not all, for we further noticed that different positions of the instrument gave seemingly different distances of the bridge below the centre. In every position the instrument was truly levelled in the direction of Welney Bridge, yet the seeming distance of the bridge below the centre constantly varied. While repeating our experiments, with a view to discovering the cause of the variation, we were suddenly startled to find that in a new position both the phenomenon and its several phases vanished altogether, and Welney Bridge, instead of appearing below the cross-hair, now appeared considerably *above* it, just as truly as the most enthusiastic Zetetic could wish! We looked at our level, thinking we had made some error, but no, that was all right, and yet the very contrary of what was seen by Professor Wallace was manifest, namely, Welney Bridge, which is 4 feet lower than the Old Bedford Bridge, appeared above the cross-hair and not below it. Of course we repeated our experiments, and found that no two positions ever gave the same results; sometimes the bridge appeared above and sometimes below the cross-hair, but the amount of the variation was never constant. Yet the cause of this variation was a very simple one. Hitherto we had confined our attention to merely levelling longitudinally—that is in the direction of the view—and not transversely. But as soon as this latter was attended to, the irregularities disappeared. Then the view of Welney Bridge, when the theodolite was truly levelled in both directions, appeared generally a little below the cross-hair, and as, in fact, it ought to do, being 4 feet lower. By very slight, indeed, almost imperceptible, variations in the level, the apparent relationship of the bridge to the cross-hair could be very considerably altered, and the manner in which the former, whether seemingly above or below the latter, darted to the other side as it approached it, was very striking. That this behaviour should manifest itself was not to be wondered at, for as the cross-hair occupied the actual centre of the telescopic axis, it is evident that rays from a distant object must seem to be deflected from their true position by having to pass under or above the cross-hair, and form upon an axis otherwise than the actual one. The apparent position, therefore, of all objects that are at or near the true centre when viewed in a theodolite can *never be the real one!*

But besides the appearances above stated, there were others which we must not omit to mention.

Foremost of these is the appearance of the whole length of the

canal from the point of observation to the distant object. Far from the canal appearing to go down hill from the spectator, as would be the case if the earth were a globe, it was just the reverse. It appeared to rise towards the distant object as if the water was actually running uphill. This peculiarity was even much more striking in the theodolite than in the telescope. In the former it almost had the appearance of a wall of water fronting the spectator, and its effect was somewhat startling when looked at for the first time.

But far more important than this matter is the one we have now to relate. In viewing Welney Bridge we had noticed a dark band of uniform breadth above the parapet or highest part of the bridge and separated from it by a narrow streak of light. Both the band and the light appeared to be cut off by the objects on each side of the Canal. What this dark band and streak of light betokened was for sometime a mystery. On enquiry, however, the dark band proved to be the appearance presented by a railway bridge belonging to the Great Eastern Railway Company that crosses the Canal some six miles *beyond* Welney Bridge, or 12 from Old Bedford Bridge, the point of observation. The streak of light simply represented that portion of space underneath the railway bridge that was not excluded from observation by the bridge at Welney in the more immediate foreground. The striking character of the phenomena, and the accuracy of the information imparted to us, was greatly demonstrated when presently a train of carriages crossed the bridge. Then the band suddenly appeared to be more than double its breadth, the upper part became broken and irregular, with its conformation quickly changing as the varying heights of the carriages manifested themselves. Besides these features, vertical streaks of light anon appeared, corresponding to the spaces between the carriages as these passed rapidly over the bridge. It did not take long to estimate the importance of what we had seen, for here were the Wallace-Hampden conditions over again, only on a far better and more positive scale. Where we stood was Old Bedford Bridge, the point of observation. Welney Bridge in the intermediate distance corresponded to Wallace's middle signal, and the railway bridge at the further distance represented the more distant one. We only needed the heights of the various bridges for a conclusive demonstration upon one side or the other. The highest points of Old Bedford and Welney Bridges were found by us to be 17ft. and 13ft. respectively; whilst the Great Eastern Railway, in a letter to us dated August 31st, 1894, kindly gave us the height of their railway bridge as 19ft. to the top of the girder, and 15ft. to the underside. Now, if the Old Bedford Canal represents comparatively a plane surface, we should expect that, when looking from the parapet of the

Old Bedford Bridge in the direction of the Great Eastern Railway Coy.'s bridge, Welney Bridge would appear lower than either of the former, from the fact that it is lower really, its parapet being 4ft. lower than Old Bedford Bridge and 2ft. lower than the underside of the railway bridge. It follows, therefore, when looking from the former to the latter, that not only would the girder, 4ft. broad, be fully visible, but a clear space of light below it would also be apparent. And such was actually the case. Given the necessary condition of a clear atmosphere, and there, from Old Bedford bridge, can be seen the railway girder and the clear space below it appearing distinctly above Welney Bridge in the middle of the field of view. But if the earth were a globe of 4000 miles radius this would be impossible. The utmost that would be included in the field of view would be anything above a line prolonged from Old Bedford Bridge over Welney and beyond. But this line at the latter bridge would only be 28ft. lower than a tangent from old Bedford, and 56ft. lower if prolonged to the railway bridge. This line, however, would then be still 21ft. above the highest point of the latter bridge, and, as a necessary consequence, place it entirely out of the field of view. We must further add, that the case becomes much worse if a lower point of observation is taken. During these experiments the railway bridge was distinctly seen underneath the arch of Welney Bridge from a boat, the elevation of which was about 2ft. 6in. above the canal at Old Bedford. Now, in this case, the lowest boundary of the field of view would touch the water about two miles from the point of observation, and if prolonged to the railway bridge, would be 47ft. above the highest point of the latter.

But *cui bono?* Why pursue the subject further? There are only two possible standpoints against the foregoing statements of fact—either to deny them, or, admitting them, to boldly accept the necessary conclusions. To those who take up the first position we make no appeal, for knowing we have truly stated what we saw, we can only view those who disbelieve us with pity for their scepticism. To those, however, who accept the second standpoint, we say—Never mind the sneers of opponents, but boldly embrace the conclusion, and to the best of your power proclaim them.

JAMES NAYLOR.

[And, if possible, go and see the facts here recorded for yourselves.—ED.]

“We say that we see stars (referring here to the observation of celestial bodies); but we do not see the stars in such a way as to distinguish whether they be round or square, smooth-surfaced or irregular. In fact, while we see them, we can know nothing of them visually, excepting that they exist.”—SCIENCE SIFTINGS, June 9th, 1894.

THE EARTH NOT CONVEX, NOR CONCAVE.

AN AUTHENTIC EXPERIMENT PROVING MODERN ASTRONOMY AND
KORESHANITY TO BE GIGANTIC FALLACIES.

"Some endeavour to concede to us the non-convexity of inland waters, while holding that the oceans are convex. It is evident that astronomers of recognized ability are not so illogical as that, for *known laws of statics* for still fluids compel them to admit that *all* waters would necessarily be convex if the earth were rotund; and on the other hand, the inevitable conclusion is, if water is found to be *not* convex, then, we are living upon some other form of earth than a convex globe. And this is the issue, as embraced in the law of hydrostatics, or the principles relating to the pressure and balance of fluids. We do not deny these static laws, for they are the *basis* of terrestrial science, and concerning these we quote as follows from Wm. J. M. Rankine, Civil Engineer, F.R.S.S.A. :—

"Pressure and Balance of Fluids.—The necessary consequence of that property (of liquids) is the following principles, which are the foundation of the whole science of hydrostatics. (1) In a perfect fluid when still, the pressure exerted at a given point is normal to the surface upon which it acts, and of equal intensity for all positions of that surface. (2) The surface of equal pressure in a still fluid mass is everywhere *perpendicular* to the direction of gravity—that is, horizontal. Definition of Horizontal.—A HORIZONTAL SURFACE IS A SURFACE WHICH IS EVERYWHERE AT RIGHT ANGLE TO THE DIRECTION OF THE FORCE OF GRAVITY. *SUCH IS THE SURFACE OF A PIECE OF STILL WATER.*"

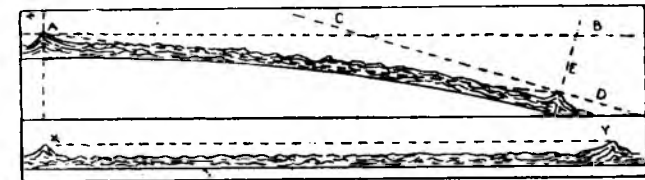
Proctor evidently recognised that the issue rested here; and the way he consoled himself in referring to attacks upon the Copernican system, was in *denying* the testimony of experimentalists concerning the non-convexity of the water's surface. Hence, he said in his "Myths and Marvels of Astronomy," page 280.

"Of course, if Parallax had, with his eyes a few inches from the surface of the Bedford Canal, seen an object close to the surface six miles from him, there manifestly would have been something wrong in the accepted theory about the earth's rotundity."

Upon Proctor's own admission it only remains, in order to convince honest and consistent astronomers, to prove to them that *water is not convex*. This we can do if they will condescend from peering skyward concerning which they know nothing, to test the surface of water, concerning which they *can know*! It has been demonstrated beyond doubt

by the sea horizon, by experiments on Bedford and Erie Canals and Lake Erie, and other waters, and by the *datum lines* adhered to in the construction of the Suez Canal in Egypt and the Manchester Ship Canal in England, as well as by the Standing Order of the English House of Lords and Commons forbidding allowance for calculated convexity of the earth in public works. . . .

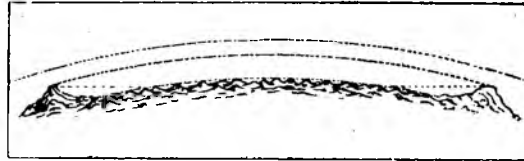
There are those who are not satisfied with these proofs; they doubt if experiments upon six or even ten miles' distance is sufficient to demonstrate the fallacy of modern astronomy. To such, and to those who may deny the evidence of competent experimentalists . . . we have to offer an *authoritative* and *noted experiment* over a long stretch of 183 MILES. Had the experiment been made by a Zetetic his report would have been laughed at and considered as unworthy of notice, but coming as it does from the Signal Corps of the U. S. Army, and on record in Washington City, no sane man will dispute it. The particulars of this experiment were published and illustrated in *Harper's Weekly* of Oct. 20th, 1894, from which we take the "profile" illustration below. The experiment was conducted with the Glassford Flash-Light or Heliograph. The signal stations were Mt. Uncompahgre in South-Western Colorado, and Mt. Ellen in Southern Utah; the former 14,418 ft. above sea level, the latter 11,410 ft.; the plateau lying between the two stations is 7,000 ft. higher than the sea. According to the calculated rate of curvature of a spherical body 25,000 miles in circumference, a straight line (A B) running at *right angle* with the *perpendicular* at the transmitting station,



Mt. Uncompahgre (A) would run as a *tangent* from the line of curvature, so that in the distance of 183 miles, the curvature would place Mt. Ellen *downwards* from the tangent line, *below* the line of vision, *nearly 6 miles!* and yet the receiving station was seen on a *level with the eye* from Mt. Uncompahgre, on a line *coincident with the "tangent" line!* Do you know what the *accepted* law of perspective would demand in order that Mt. Ellen be seen on a line of vision coincident with the horizontal tangent from Mt. Uncompahgre? It would require that the space of 6 miles be reduced to a *vanishing* point, which would place the point of intersection of the tangent and B with the oblique (?) perpendicular E, 3000 (diameters) $\times 6 = 18,000$ miles from A! It is difficult enough for us to demonstrate to some minds how Mt. Ellen (height 4,000 ft.

above the plateau) is reduced almost to a vanishing point, and brought up to an apparent level with the height of 7,000 ft. above plateau (as in figure in lower part of cut) without dipping Mt. Ellen *downwards* 6 miles *below the line of vision*! Refraction? Yes, but it would apparently elevate Mt. Ellen only *one-tenth*, leaving 5 miles yet unaccounted for.

Take another view: If we admit even that the two stations be looked upon as being connected by a *straight line* upon a spherical body (which could not be at *right angle* with the perpendicular of either station; and does the earth curve *upwards* and *then downwards* from starting point or downwards continually?), there would be (as in the following diagram reproduced from *Harper's Weekly*, a *BUGLE OF SOLID EARTH NEARLY 70 MILES LONG EXAGGERATED PROFILE OF THE COUNTRY,*



Showing the two Peaks actually hidden from each other by the Curvature of the Earth's Surface.

AND OVER 5,000 FT. *HIGHER* THAN THE TOPS OF THE TWO MOUNTAINS TO RENDER THEM *INVISIBLE* and "*HIDDEN FROM EACH OTHER.*" The transmitting station *was seen* in clear sunset light, and the message was flashed successfully from Mt. Uncompahgre to Mt. Ellen, and transmitted by telegraph from thence to Washington City! How is this? Will you deny it? It is substantiated by the U. S. Signal Corps; the distance, rate of curvation and height of mountains can be had from any standard geographical work. Will you explain it? Then do so, taking for a basis of explanation *facts* which can be proven, and then harmonise your configuration with the Bible. Until you do this you cannot say that at least *this proof* is "very silly nonsense, and utterly unworthy of notice!"

This heliograph experiment speaks out in thunder-tones against the fallacy of the modern scientific system, and *utterly overthrows* the boasted accuracy of present day astronomy and geodesy! The truths of nature assert themselves in corroboration of the Bible cosmogony!

The proofs offered by "Parallax" that the earth is not convex—that we do not live upon a rotund surface, are conclusive and irrefutable.—Extracts from *The Herald of Glad Tidings*, No. 14.

"UNIVERSAL GRAVITATION, A PURE ASSUMPTION."

BY LEO CASTLE.

No. VIII.

The following extracts are taken from "*A Million of Facts.*" By Sir Richard Phillips:—

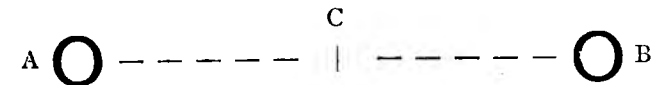
"If the sun has any power, it must be derived from motion; and if acting on bodies at a distance, like Jupiter on his moons, or the Earth on its moon, THERE *MUST BE AN INTERVENING MEDIUM TO CONDUCT ITS MOMENTUM THROUGH ITS SYSTEM.*"

"It is a principle never to be lost sight of, that circular motion is a necessary result of equal action and reaction in contrary directions; for the harmony would be disturbed by variation of distance, if the motion were rectilinear. The same action and reaction are therefore only to be preserved by reciprocal circular motion. NO ATTRACTION AND NO PROJECTILE FORCE ARE THEREFORE *NECESSARY.* THEIR *invention must be regarded AS BLUNDERS OF A SUPERSTITIOUS AGE.*"

"If the bodies came near while moving THE SAME WAY, there would be no mutual REACTION, and they would go together for want of reaction, and NOT OWING TO THAT *MECHANICAL IMPOSSIBILITY CALLED ATTRACTION.*"

"To accommodate THE *HYPOTHETICAL LAW OF UNIVERSAL GRAVITATION* to the phenomena of the Planets, astronomers have preferred to change the mean density of matter itself; and the Earth, for comparison, being taken at a density of 1000, to accommodate Mercury to THE ASSUMED LAW, it is taken as 2,585; Venus, 1,024; Mars, 656; Jupiter, 201; Saturn, 103; and Herschel, 218. Consequently, we have the *paradox*, that Jupiter, 1,290 times larger than the Earth, contains but 323 times more atoms. Saturn 1,107 times larger, but 114 times more atoms. Even the Sun, according to these theorists, is but one-fourth the density of the Earth! There may be differences, but chemistry and all the laws that unite and compound atoms, are utterly at *variance* with so rash and wild an *hypothesis.*"

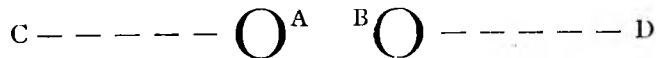
"It is waste of time to break a butterfly on a wheel, but as astronomy and all science (so-called or hypothetical,—Ed.) is beset with *fancies* about attraction and repulsion, it is necessary to *eradicate them.*"



"If there are two bodies, and it is required to move A to C, the force moving A to C *must* proceed from the side A. Either some impact, or some involvement of a motion towards C, *must* act at A to carry A to C. The modern schools, however, assert that B may move A to C, and A move B to C; and this is *mutual attraction*!! Hence it is necessary to believe that B acts on the side A, where B is *not present*; and that A acts on B on the side B, where A is not present. In other words, A is required to be where it is not, and also be in force at A, so as to move B to C! all of which is absurd."

"If in any case A and B approach, it is not because A moves B towards itself, or B moves A towards itself, but owing to some causes which affect the space in which A and B are situated; and which causes act on A at A, and on B at B . . . the statement that A moves B, and B moves A, is ignorance, and is what is meant by attraction. It is also worse than ignorance to justify idleness by asserting that the true cause is indifferent; or to justify ignorance, by asserting that it is unknowable!!"

"This reasoning applies to every species of Attraction, whatever may be the pomposity of equivocal terms in which it is described. Universally, bodies cannot push other bodies towards themselves."



"If A and B are said to repel one another, and that B makes A move to C, and A makes B move to D, we have to bear in mind, that while A is moving to C it is in force *only in that direction*, and *cannot* therefore be *moving* B towards D. In like manner, while B is moving to D, it is in force *only in that direction*, and *cannot*, therefore, be in force in the contrary direction so as to move A to C." Every species and variety of Attraction and Repulsion are therefore absurd.

"MATTER IS IN ALL CASES *THE CONDUCTOR OF MOTION*. If a body moves, it is because it is the patient of some sufficient momentum of body or matter acting ON the side FROM which the body moves, and only in force in *that direction*." "Some adopters of attraction, &c., talk, by false analogy, of *drawing*, others of *pulling*, *lifting*, &c. La Place INVENTS gravitating atoms, and gives them a velocity of 6,000 times that of light, which in some way (known only to himself) performs the work of bringing the body in; others IMAGINE little hooks! As to drawing, pulling, &c., *it behoves them to show the tackle*—the levers, the ropes, &c."

"In spite of all the learning, ingenuity, and elaborations of men, confessedly very able, if there is not and cannot be any action of the nature of attraction, and if the phenomena ascribed to it are local effects

of palpable local causes, and if all the phenomena and involvement may be clearly explained on different principles, then it may be to be lamented that so much ability and character should have been wasted, while a respect for truth and sound reasoning demands that the whole should be forgotten as a dream, or demolished as a card-house."

(To be Continued.)

VARIABILITY OF PENDULUM VIBRATIONS.

Many contend that because a pendulum vibrates more rapidly in the northern region than at the equator the earth is thereby proved not only to be a globe, but to have axial motion, and because the variation in the velocity is that of gradual increase as the North Pole is approached, it is concluded that the earth's true shape is that of an oblate spheroid—the diameter through the poles being less than that through the equator. The difference was calculated by Newton to be the 235th part of the whole diameter; or, that the polar was to the equatorial diameter as 680 to 692. Huygens gave the proportion as 577 to 875, or a difference of about one-third of the whole diameter. Others have given different proportions; but the differences of opinion, each the result of calculation, has become so great that many have concluded that the earth is really, instead of an oblate, an oblong spheroid. It is argued that as the length of a pendulum vibrating seconds at the equator is 32,027 inches and at the North Pole 39,197 inches that the earth, like an orange, has a globular form, but somewhat flattened at the "poles." This so-called argument proceeds and depends upon the ASSUMPTION that the earth *is* a globe having a "centre of attraction of gravitation," towards which all bodies gravitate or fall, and as a pendulum is essentially a falling body under certain restraint, the fact that when of the same length it oscillates or *falls* more rapidly at the north than at the equator is a proof that the northern surface is nearer to the "centre of attraction," or centre of the earth, than the equatorial surface; and of course if nearer the radius must be shorter, and therefore "the earth is a spheroid flattened at the poles."

The above is very ingenious and plausible, but unfortunately for its character as an argument THE EVIDENCE IS WANTING THAT THE EARTH IS A GLOBE AT ALL; AND UNTIL PROOF OF CONVEXITY IS GIVEN, ALL QUESTIONS AS TO ITS BEING OBLATE, OBLONG, OR ENTIRELY SPHERICAL, ARE LOGICALLY OUT OF PLACE!!

It is the duty of those who, from the behaviour of a pendulum at

different latitudes, contend that the earth is spherical to first prove that NO OTHER cause could operate besides greater proximity to a centre of gravity in producing the known differences in its oscillations. This not having been done, nor attempted, *the whole matter must be condemned as LOGICALLY INSUFFICIENT, IRREGULAR, AND WORTHLESS FOR ITS INTENDED PURPOSE.* M. M. Picart and De la Hire, two celebrated French *savans*, as well as many other scientific men, have attributed the variations of the pendulum to differences of temperature at different latitudes. It is certain that the average changes of temperature are more than sufficient to bring about the variations which have been observed. The following quotation will show the PRACTICAL RESULTS of these changes :—

“All the solid bodies with which we are surrounded are constantly undergoing changes of bulk, corresponding to the variations of temperature. . . . The expansion and contraction of metals by heat and cold form subjects of serious and careful attention to chronometer makers, as will appear by the following statements :—The length of the pendulum vibrating seconds, *in vacuo*, in the latitude of London (50° 31' 8" north) at the level of the sea, and at the temperature of 62° Fahr. has been ascertained with the greatest precision to be 39·13929 inches. Now, as the metal of which it is composed is *constantly* subject to variations of temperature it cannot but happen that its *length* is constantly varying, and when it is further stated that if the “bob” be let down 1·100 of an inch, the clock will lose ten seconds in twenty-four hours ; that the elongation of 1·1000 of an inch will cause it to lose one second per day ; and that a change of temperature equal to 30° Fahr. will alter its length 1·5000 part, and occasion an error in the rate of going of eight seconds per day, it will appear evident that some plan must be devised for obviating so serious an inconvenience.”—NOAD'S *Lectures on Chemistry*, p. 41.

“The mean annual temperature of the whole earth at the level of the sea is 50° Fahr. For different latitudes it is as under :—

Latitude (εqr.)	0=84·2°.	Length of pendulum	39·072.
”	10=82·6°.	”	”
”	20=78·1°.	”	”
”	30=71·1°.	”	”
”	40=62·6°.	”	”
” London	50=53·6°.	”	39·139.
”	60=45·0°.	”	”
”	70=38·1°.	”	”
”	80=33·6°.	”	”
” Pole	90=00·0°.	”	39·197

‘MILLION OF FACTS.’

From the above table it is seen that the temperature gradually decreases from the equator towards the “pole,” which would of necessity *contract* the substance of the pendulum, or shorten it, and cause it to vibrate more rapidly. Besides the temperature of a given latitude, the density of the air must be taken into account. In numbers 294 and 480 of the *Philosophical Transactions*, Dr Derham records a number of experiments with pendulums in the open air, and in the receiver of an air-pump, which he summarises as follows :—“The arches of vibration *in vacuo* were larger than in the open-air, or in the receiver before it was exhausted ; the enlargement or diminution of the arches of vibration were CONSTANTLY PROPORTIONAL TO THE QUANTITY OF AIR, or rarity, or density of it, which was left in the receiver of the air-pump. And as the vibrations were longer or shorter, so the times were accordingly, viz., two seconds in an hour when the vibrations were longest, and less as the air was re-admitted, and the vibrations shortened.

Thus it is evident that two distinct and tangible causes necessarily operate in practice to produce variability in the oscillations of a pendulum at different latitudes, without having recourse to a “FLATTENING AT THE POLES OF AN IMAGINARY GLOBE.” First, the gradual diminution of temperature as the pendulum is carried from the equator to the polar region tends to shorten its length, and thus to increase its number of vibrations per hour or day ; and, secondly, as the polar centre is approached, the air is colder, therefore denser, and therefore the ‘arches of vibration’ shorter, and the times of oscillation less, or, in other words, the number of vibrations greater in a given period. It has also been ascertained that the pendulum is influenced, other conditions being the same, by electric and magnetic states of the atmosphere. When intense electric conditions exist the arches and times of vibration are less than during the existence of opposite conditions. Hence, if in different latitudes pendulum experiments are made *in vacuo*, at the same temperature, and always at the level of the sea, different electric and magnetic conditions prevailing, will induce variable results. THE ATTENTION OF SOME OF THE MOST ACCURATE AND PATIENT OBSERVERS HAS BEEN DIRECTED TO THIS MODE OF PROVING THE OBLATE SPHEROIDAL FORM OF THE EARTH, BUT THE RESULTS HAVE NEVER BEEN SATISFACTORY, NOR SUCH AS WAS EXPECTED, OR THAT THE THEORY OF ROTUNDITY SHOULD PRODUCE.

Mr Bailey expresses (in *Memoirs of the Royal Astronomical Society*, Vol. 7), the opinion “that the vibrations of a pendulum are powerfully affected, in many places, by the local attractions of the sub-

stratum on which it is swung, or by some other direct influence at present unknown to us, and the effect of which far exceeds the errors of observation."

"General Sabine himself," relates Captain Foster, "was furnished with two invariable pendulums of precisely the same form and construction as those which had been employed by Captain Kater and myself. Both pendulums were vibrated at all the stations, but FROM SOME CAUSE, which Mr Bailey was UNABLE TO EXPLAIN, the observations with one of them were SO DISCORDANT at South Shetland as to REQUIRE THEIR REJECTION." FIGURE OF THE EARTH: J. Von Gunpach.

From these remarks and quotations it is obvious that the ASSUMPTION of Sir Isaac Newton that the earth is an oblate spheroid is not confirmed by experiments made with the pendulum. *The Zetetic*. Extract from *English Mechanic and World of Science*, Oct. 23rd, 1896.

In the column headed "Letters to the Editor," the following reply appears, signed by "A Fellow of the Royal Astronomical Society."—

"In reply to "Foucault's Pendulum" (Query 89090, p. 192), the plane of oscillation of the pendulum in latitude 5° would rotate in a retrograde direction at the rate of only 1'307336° per hour; in other words, it would take 11'4737 days, or about 11½ days, to complete its rotation. Hence, while it might *theoretically* be employed to show the earth's rotation, IN PRACTICE IT MUST FAIL TO DO SO."

JUST WHAT THE "*Flat-earthites*" SAY!!! Ed.

THE SURFACE OF WATER.

BY LIEUTENANT E. E. MIDDLETON, R.N.

A SERIES OF LETTERS WRITTEN IN 1871.

No. 1.

SIR,—Being delighted—nay, more than delighted, charmed—nay, more than charmed, invigorated, galvanized, and thoroughly electrified to find that even one journalist in London has the courage—nay, more—the headlong, precipitous, plumb-live frenzy to approach, peer at, gaze upon, then fall—yes, actually fall to the other side of an unpopular subject, and that subject the much-dreaded volcanic subject, the shape of the earth; I, being thus inspirited, have dared to enclose you these few lines in hopes that I may in some way assist to buoy up the sinking hearts of any who shall have whispered to himself or herself the latest and most astounding *fact*, that, after all—yes, after ALL, and I hope your readers will plunge to the full significance of the word ALL—the earth is *really, actually, undeniably a plane*, and NOT A

GLOBE. Have I been to sea? Yes! Yes, for months at a time, and I fully believe the sea is flat; and that all water, motionless, or such as is simply influenced by the action of heat and cold, or tide, must conform to the shape of a plane, and cannot by any possibility be convex. To plainly present a convex surface, water must be *running*—not only running, but boiling along the confined channel of a river, at a speed of some 12 or 15 miles an hour. The Jheelum is a river that runs out of Cashmere—a deep, large river, and its course through the mountains is often a very grand sight, and many a pleasant hour I have spent watching at some noble sweep of the hurrying torrent, and as often I have remarked that on such occasions the centre of the stream was raised at least a foot, if not more, above the water on each side of the river. The reason for this convexity is simply that the central stream runs much faster than the water at the sides, or that approaching the sides. Such central stream running about twelve miles an hour has certainly a convex surface. A real actual convexity is plainly visible to the raked eye in the short distance of the width of a river; why, then, is the *supposed convexity* (of the globular school) *not* apparent on still water? Because *it does NOT EXIST!*

Now for a dilemma—a dilemma for the Globe—ites. Given *still water*, convex; when or in what position does it become level? For clearly, if a pool in a river is convex, then the running stream must be level. Where, Globe-ite, where? "Oh, just where its convexity is plainly visible to the eye." Such is the answer they, the Globe-ites,—somewhere would have to give—remember, reader, I am only supposing a case—yes, *have to give*, by the law of opposites. Convex being opposed to level, the still water being convex (as they say), it stands to reason that the utmost development in the other direction must be the level; but then we see distinctly that such is convex—convex to the naked eye; therefore the Globe-ite has perforce to state that the thing shall be exactly the reverse of what it actually is!—Yours,

E. E. M.

(To be Continued.)

IN MEMORIAM.

We deeply regret to announce the death on November 4th, 1896, of our friend, MRS. CARPENTER, relict of William Carpenter, of Baltimore, U.S. America.

"Their precious dust the Lord will take, and freshly mould."

METEORIC SHOWERS—MISNAMED COMETOIDS.

BY LADY BLOUNT.

A recent issue of *The Morning Post* contained an article entitled "Meteoric Showers," in which it is stated that in spite of our forefathers' familiarity with these displays, it did not occur to them that they were periodical. Nor was the fact so discovered until the 19th century was far advanced. Records of these phenomena go back many hundreds of years, and in China a long time B.C.

Humboldt recorded a wonderful display of "shooting stars" in Cumana, South America, on the night November 11-12, 1799. Thousands of meteors were darting through the sky from north to south for a period of four hours. The same meteoric display was seen also in Guiana, in the United States, in Labrador, and as far north as Greenland. But very little of it was witnessed on our side of the Atlantic. This was unheeded until the night of November 12-13, 1833, when there was a recurrence of meteoric showers, which is believed to have been the most superb display ever witnessed. This again took place on the American side of the ocean. Professor Olmsted remembered Humboldt's hint that these meteoric showers were probably periodical; and this led the Professor to watch attentively for the next display, which appeared about the year 1866.

The writer of the above-quoted article says:—"What may be the precise meteorological influence of these meteoric showers is not known, but it is perhaps hardly necessary to remind even the non-scientific reader that they are not what Holmsted describes as 'verie starres in deed,' otherwise the sky would long since have been left bare. The explanation offered was that the meteors are particles of matter which are distributed in myriads along the tracks of comets, and which Schiaparelli mistaking calls cometoids."

It is said that they are "drawn" with immense velocity into our atmosphere, the resistance of which medium generates such an intense heat in the wandering particles that they, igniting to white heat, become visible to us for a second or two as luminous objects, or "stars," and soon disappear, being burnt into powder or gas. But what is the power that "draws" them? Gravitation has been shown to be a mere hypothesis with no foundation in fact, and it is contrary to all our experience to think that one body can draw or pull another without any pulling tackle between them.

Things fall downward, by their own weight, and in reference to the recent violent earth shocks which were felt in many parts of England,

but principally in the West, on December the 17th last, it was suggested that there may be some connection between meteors and earthquakes, observers having remarked that this point (although not easy to determine) is worthy of consideration.

Some think the earth periodically crosses the supposed track of these meteorites. But proof has never been given that the earth has any axial or orbital motion. Another opinion is that these meteors are similar in nature and substance to what are termed thunderbolts, and merely chips of metallic substance from off the planets!!!

However, I think that this proposition has met with a cutting and a closing reply from one who showed that the theory must be erroneous, as our earth, which is supposed by Evolutionists to be a "planet," is not in the habit of periodically having pieces chipped from off its surface through any violent collision or otherwise. From the fact that these showers are periodic as well as from many other reasons, we have evidence showing that the fall of *meteors in 1833* was NOT the signs foretold by Christ, who said, "Fearful sights and great signs shall there be from heaven. And there shall be signs in the sun, and in the moon, and in the stars" (Luke xxi. 11-25). Besides, He said that the "Stars should fall from heaven," &c. (Matt. xxiv. 29). And, as has been shown, "meteors" are not stars. The stars and the planets still retain their God-appointed place in the sky, as can be seen on any clear night. Again, the displays have been always local, as, for instance, those already referred to; and if these, the greatest displays recorded, were *not* world-wide, how much more were the lesser displays confined to particular localities. Whereas the signs prophesied by "Him who created all things that are in heaven and in earth, visible and invisible" (Col. i. 16) are evidently to be *world-wide*, because the world has to be warned of His second coming, which is drawing near.

These are the words of Christ with which I will close this short article—"The powers of heaven shall be shaken, and THEN shall they see the Son of Man coming in a cloud with power and great glory. And when these things begin to come to pass, then look up, and lift up your heads, for your redemption draweth nigh. And he spake to them a parable, "Behold the fig tree and all the trees; when they shoot forth ye see and know that summer is nigh at hand. So likewise ye, WHEN YE SEE THESE THINGS COME TO PASS, *know* ye that the Kingdom of God is nigh at hand. Heaven and earth shall pass away but My words shall not pass away" (Luke xxi. 25-33). These words bear great import, and afford proof that the fall of meteors in 1833 was not *the* sign predicted by Christ.

"FLAT-EARTH-ITES" v. GLOBE-EARTH-ITES.

"Sir Robert Ball is going to Portsmouth shortly to lecture upon "Recent Researches on the Sun," and strangely enough something of a hostile reception is being arranged for him in one quarter.

One would have thought that if there was a single subject which had escaped the taint of heated controversy it was astronomy. But Portsmouth boasts a local astronomer, one Ebenezer Breach, who is getting some posers ready for Sir Robert. According to Mr. Breach the sun is only 5,000 miles distant from the earth, and not 95,000,000. "Is Sir Robert aware," demands Mr. Breach, "that it is decided in Portsmouth that the teachers shall not teach such falsehoods in this enlightened age to their scholars in the Board schools, and push 95,000,000 cartload of falsehoods down the children's throats to please 'red tape' in the Government? Whitehall is beginning to see the evils of such a system. . . . Therefore the 3,000,000 children of England shall not be taught falsehoods to please Sir R. Ball, General Drayson, or all the star army put together. Portsmouth teems with intelligent young people, and such intelligence shall not be misled and trampled upon by the absurdities of the universities that should at once receive a national and universal cleansing." —*Daily Mail, November 16th, 1896.*

To the Editor of the Daily Mail.

SIR,—In your issue, Nov. 19th, you make a statement in your comments on Sir Robert Ball's coming lecture at Portsmouth, which leads me to think that you are in ignorance of the existence of the Universal Zetetic Society, of which "Parallax" was the founder.

The statement I refer to is: "One would have thought that if there was a single subject which had escaped the taint of heated controversy it was astronomy."

May I ask, WHY should modern astronomy escape from being controverted? Would you believe that modern astronomy is nothing but a series of conjectures and contradictions? I judge from what you say that you believe the sun to be 95,000,000 of miles from the earth? May I ask you to remember that it was lately removed by Professor Gill to close upon 3,000,000 of miles *nearer* to the globe than it was previously *supposed* to be? How much more battleboard and shuttlecock work are these astronomers going to have with poor old "Sol?"

I have said that modern astronomy is a series of contradictions. Now, I will prove my assertion from *their own* statements. Then you will see WHY modern astronomy *should* be controverted.

Pythagoras, who asserted that he had been in hell for some time, taught that "the sun is the centre of the universe, and that all the planets revolve in elliptical orbits round it." (See *Lempriere's Classical Dictionary*.) He *supposed* the sun to be 44,000 miles distant from the earth-globe. Copernicus, the resuscitant of the philosophy of Pythagoras, *supposed* its distance to be 3,391,200 miles. Kepler 12,376,800 miles. He made another guess, and made it 26,000,000 miles!! Ricciola 27,360,000 miles. Sir Isaac Newton 28,000,000 miles. He made another guess, and made it 84,000,000 miles!! Hind 91,000,000 miles.

He made a second guess, and made it 95,298,260 miles. Herschel 95,000,000. D'Alembert 96,000,000 miles. Mayer 184,000,000 miles!! Professor R. A. Proctor 91,500,000. Sir Robert Ball 93,000,000 miles. There are many other intermediate guesses by others, but those given suffice to show the utter inability of our astronomers to ascertain anything like an approximate distance of the sun from the earth. Professor R. A. Proctor, speaking of the sun's distance, says: "Putting the matter as one of *probabilities*, as ALL SCIENTIFIC STATEMENTS MUST BE . . . the wonder is that they have any idea at all of the distance." The fact is proved by their own statements that *they have not got any idea at all of its distance*!! Sir Isaac Newton, in his Principia, resuscitated the fundamental proposition of Pythagoras thus; "The sun is the centre of the solar system and *immovable*." Since then Professor Herschel found out that the sun was *NOT immovable*. Thus it is indisputably proved that astronomers absolutely contradict each other by asserting, as Professor Proctor says, mere "probabilities," and, therefore, they do not know anything about natural phenomena or its causes. No, not even the surface shape of the earth they walk about upon! Is it not patent to you that Professor Herschel, by his discovery of the *sun's motion*, utterly refutes the *supposition* that the sun is *immovable*, and, therefore, it is *not* the centre of the solar system, or in fact any system at all, unless it be the system of *supposing* things which they do not understand anything at all about, and indeed, in many instances, have no existence? Consequently the "elliptical orbit" business and the whole foundation and vital propositions of modern theoretical astronomy, are, from astronomer's showing, utterly false, having no basis in fact, nature, or natural phenomena.

No doubt Sir Robert Ball will inform his Portsmouth hearers that "the heat of the sun is so intense that even the most refractory substances there present—such, for example, as iron, flint, or lime—when submitted to the awful solar temperature will be transformed into glowing vapours." But his admirers must remember that others have asserted that "there is no heat *in* the sun," "heat does not come *from* the sun." One has even gone so far as to assert that "the sun is a frozen mass eternal." But no doubt Dr Ball knows best about the matter, seeing that he has attained an age compared with which the age of Methuselah is nothing! The Doctor is reported to have said: "When the earth was young it went around so fast that the day was only three hours long. The earth was liquid then (in liquor?) and it spun around and around at that fearful speed . . . it at last burst in two. The smaller part became the moon, which has been going round the earth ever since." This puts fire-eating out of court altogether! Sir Robert must have been there at the time, and have seen the moon, in utter de-

fiance of Sir Isaac Newton's "splendid law of universal gravitation," run away from its parent! Then, sir, there is "that fearful speed" of which Sir Robert speaks, which leaves us to conclude that at that time all created intelligence was as senseless as lifeless matter.

A scientific fact should be as sacred as a moral principle, but the fact is, Modern Astronomy is utterly devoid of any facts as the resultant of its own hypotheses.—Yours respectfully,

LEO. CASTLE.

P.S.—By book post I forward you a copy of our journal for Sept., 1894, in which you will find the first part of a series of articles on *The Pretensions and Pretences of Modern Astronomy*. This I would ask your careful perusal of. Also you will find a copy of *One Hundred Proofs the Earth is not a Globe*.

L. C.

The Editor of the D.M. did not print our letter, but the following editorial hocus-pocus appeared in the issue for November 27th:—

"FLAT-EARTH"-ITES.

"The agitation against the popular conception that the earth is round has just come under new management, and henceforth 'the majestic form of Truth' is, according to the sentiments quoted in the organ of the Flatites, to be made to 'stand before the bar of justice' in a manner that will make 'that hideous monster, Error, hang its head in silence' at a very pronounced angle.

The *Daily Mail* reporter who set out to find why the movement had come under new management thought at first it was because the old management had neglected to prove the flatness of the earth by a Hyde Park demonstration, or some such simple and obvious plan of asserting the mighty truths of nature. But as events proved, the only cause for the change was the ill-health of Mr. Albert Smith, which had caused him to hand over the editorship of *The Earth not-a-Globe Review* to other hands. The new editor appeals to all Zetetics to 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."

And not content with this contract, the "Flat-Earth"-ites are, in spare time, going to expose the glacial theory—which they hold to be a greater fraud than the Works Department of the County Council—and to make violent assaults upon the "boasted accuracy of modern astronomy."

Evidently the Editor of the *Daily Mail* had to hang his head in silence at a very pronounced angle!!! least this so-called "most exact of the sciences" should be manifested as a fraud. Why! in the first six words of his grandiloquent remarks he speaks the truth, and did not know he had done so!! "The popular conception." Yes, that is all modern astronomy is from beginning to end! A mere CONCEPTION, having no foundation in fact, reason, or common-sense! Why, he did not so much as perceive that when he proclaimed modern astronomy to be "the popular conception" he exposed the basis upon which that science is founded to be a mere *ignis fatuus*, leading its followers into the destructive quagmire of contradiction.

LEO CASTLE.

TRIGONOMETRY AND ASTRONOMIC DISTANCES.

Trigonometry—the measurement of triangles—has been defined as "the science of the numerical relations between the sides and angles of triangles" (Blackburn); and teaches "how from given values of some of the sides and angles to calculate, in the most convenient way, all the others." In presence of the *Ordnance Survey* of this country, there is no room to question the applicability of this science to terrestrial distance, and the heights of objects upon earth's surface. It is assumed by both orthodoxist and paradoxist—spherist and planist—to be equally applicable to the heavens. Such assumption raises a question for examination.

Obviously, from the nature of the case, the first requirement is to find the triangle.

The plane triangle upon earth's surface need not detain us. The question is, whether, as the surveyor can determine the vertical distance or height of a light upon a mountain side, can the astronomer determine within a reasonable margin, with certainty, the vertical distances of objects in the heavens?

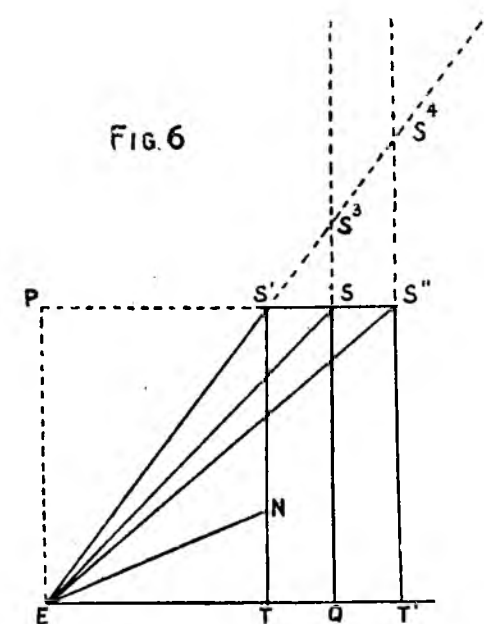


FIG. 6

For the sake of simplicity, let us imagine the vertical section of a mountain, in which, Fig. 6, EQ is a portion of the base in the plane of flat earth's surface; let S be a light upon the mountain side, and vertical to Q; then for the station at E let the observed altitude of S be the angle SEQ = 45°; join SQ; we have thus the right angled triangle EQS.

Draw S' S'' parallel with EQ; let that be the diameter and the plane of a circuit in which the light moves around the mountain. Join S' E, S'' E. Obviously the angle S' EQ is less than the angle SEQ; also that the angle S' EQ is greater

than the angle SEQ . Let S' be vertical to T , a point in the base, and S'' vertical to T' , another point in the base. Let ES' be produced to S^3 and to S^4 . Join S^3S , also $T'S''S^4$.

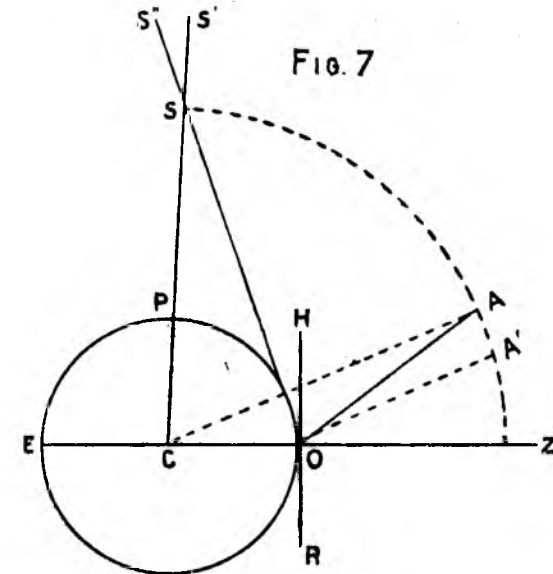
Now by virtue of the *observed altitude* only, we could not construct definite triangles, because as seen from E the light might be at S' , S^3 , S^4 , or at *any point* in the same straight line, though infinitely produced—the *angular elevation being the same* for the apex of each of the triangles EST , ES^3Q , ES^4T' , though the *vertical distance varies* in each. Hence the need for a knowledge either of the base line, or the point in the line ET' to which the light is vertical. With such knowledge we then can construct the right-angled triangles ETS' , EQS , $ET'S''$, the solution of which by trigonometry would show the *vertical distance of the light* to be the same for the different points S' , S , S'' in its circuit, though the *angular elevation varies* in each triangle.

We purposely omit the solution of these triangles, as there would be no dispute upon this point amongst the competent, in order that attention may be the more emphatically directed to the *logical* aspect of the main question, this being our immediate business.

From the foregoing it will be evident that in ascertaining the height of an object, there is required a definite triangle, one side of which must be of known value. The Surveyor obtains these conditions.

Utilising the same figure for astronomical purposes, then upon the theory of a flat earth, let E be the northern centre, Q a point upon the equator; then EQ is the equatorial radius. T , T' the tropics; QS , the vertical direction of the sun at equinox; S' , S'' the solstices, the limits of the sun's north and south declination. Now at the time of the northern winter, when the sun is at its greatest south declination, the point S'' , the observer at E could not obtain the line of direction ES'' because the sun would be $23\frac{1}{2}^\circ$ below his horizon EQ ; at equinox he could not obtain the line of direction ES , because the sun would then be upon his horizon EQ . In the northern summer, when the sun is at its greatest north declination, the point S' , the observer at E could not obtain the line of direction ES' , for by observed meridian altitude the angle of $23\frac{1}{2}^\circ$ elevation would be given by the line EN . Thus, instead of the observed elevations as obtained by the Surveyor, and represented by the lines of direction ES' , ES , ES'' , the astronomer obtains respectively EN , EQ and *invisibility*. That would be an exceedingly enlightening demonstration by which it could be shown that ordinary plane trigonometry is equally applicable in these two cases; for it cannot be shown that the sun's vertical distance varies with its declination. If any object to observations at the assumed station E because of its practical inaccessibility, then in our paper on *Finding the latitude*, we will show the same relative results for actual observations at lat. $51\frac{1}{2}^\circ$ N. (London).

IS TRIGONOMETRY APPLICABLE UPON THE THEORY OF EARTH A SPHERE?
—A triangle is asserted to be found by virtue of observations from which there can be deduced an angular value—*parallax*. Parallax is defined as the difference in the apparent position of an object in the heavens when viewed from two stations—the one being the datum point of earth's centre, the other, that of the observer upon earth's surface; the angle measuring this apparent difference is the parallax of the object. It may be illustrated by half-a-dozen diagrams; in Fig. 7 we give the simplest.



Let EPO be a plane intersection of earth through the poles; C the centre, O station upon earth's surface, S object in the heavens; CS the apparent direction from the datum point of earth's centre C ; OS its apparent direction to an observer at station O ; the angle CSO is the parallax. When subtended by earth's radius CO , it is called *horizontal*, or *diurnal* parallax— C being taken as the horizon—the angle has then its greatest value; as the object progresses towards Z , the angle contained between SC and SO diminishes; upon its reaching the zenith Z it vanishes, by the coincidence of the lines. Obviously the same result would happen if O moved in the direction OP , S being stationary.

If we take C as the sun, around which the earth moves in the orbit OPE , then CO is the radius of earth's orbit, and is the scale of measurement for the distances of the stars, and the angle at S is the annual parallax, if this angle equalled one second of arc, ($0.1''$), then CO being taken as 93,000,000 miles, the distance CS would be nearly twenty billions of miles (*i.e.*, multiplying CO by the ratio of the unit of circular measure to $0.1''$ of arc).

In examining this subject of parallax we must refer to some elementary teaching of orthodox astronomy, viz.,—

"From pole to equator equals a right angle."

"From zenith to horizon equals a right angle."

"The Rational or astronomical horizon is an imaginary line passing through earth's centre (parallel with the sensible horizon, and determines the rising and setting of sun, stars, and planets.)"

"The Sensible Horizon bounds the spectator's view." Now, logical consistency requires that as *observed altitudes* are measured from the *plane of the sensible horizon*, the astronomer ought to insert the line HOR when illustrating *parallax*. If the object S be theoretically upon the Rational horizon CS ; but by actual observation upon the Sensible horizon OH , and these horizons be parallel, how can angular difference be obtained from two parallel lines? Or how can an *imaginary line*

passing through earth's centre C—a point to which *the whole heavens are equally open*. avail to determine the rising and setting of sun, &c. ? The True or Rational horizon is but a theoretical figment serving for exercise in abstract mathematics.

The equator E C O when produced to the distant heavens Z is called the equinoctial, from which declination is measured. Suppose an object at A, join C A, the angle Z C A is the declination of A, say 25° . To an observer at O the object would be seen at a *zenith distance* of 25° , *i.e.*, the angle Z O A'; now the two lines C A, O A' which make the equal angles of 25° with the same straight line C O Z are indisputably parallel.

If it be true that the *zenith distance* of 25° by observation and the declination of 25° are properly illustrated by the lines O A and C A meeting at the point A, and so making the angle C A O—it follows that 25° of the smaller circle described with the radius O Z would equal 25° of the larger circle described with the radius C Z in the numerical value of arc—a fallacy too glaringly obvious for contention; hence there is no readable angle as C A O.

Again the angle—*parallax*—would be a *residual amount*, before obtaining which, allowances would have to be made for errors of various kinds and for unknown quantities, such as error in observer's latitude, of lens, in manipulation, aberration, refraction, &c., &c., and then when found what is its value? the breadth of a spider's thread as the base-line of a triangle, its sides being $2\frac{1}{2}$ inches in length, in the case of the sun; or the same base-line with one yard as the length of the sides of the triangle in the case of a star.

In "The Story of the Heavens," now issuing in monthly parts by Cassell & Co., (p 482) it is plainly stated by Sir Robert Ball that "*the parallax of the star is in the great majority of cases an absolutely insensible quantity.*" Advocates of diverse theories would assign different causes for "no readable angle;" but *no parallax* is the inevitable result, geometrically, upon a sphere—observed altitudes being measured from the sensible horizon, the plane of which varies with the latitude.

Let it be noted also (as stated in connexion with Fig. 3) that the variation in the apparent position of an object in the heavens is equivalent to the variation in observer's latitude, and is the same for both sphere and plane, being limited to the value of one side of a square upon the equatorial radius—upon the plane theory this displacement appears as varying altitudes; upon the spherical theory the amount of apparent displacement is marked off upon the axis of rotation which is cut at right angles by the plane of the observer's circle of latitude.

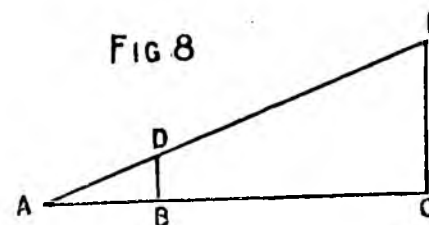
Now *angular elevation* varies with declination—*i.e.*, with the object's position in the line S' S'' (fig 6), or with the observer's latitude in the line E T' separately or conjointly, though the vertical distance S Q remains constant.

Now if there be no parallax for a fixed star upon the horizon, neither can there be any parallax for sun, moon, or planet; because, the two horizons being parallel, these two lines of direction cannot meet at an angle.

From all the preceding some simple logical conclusions are unavoidable, *viz* :— Observed altitudes afford no data for finding vertical distances, but merely from the known declination to deduce the latitude, and from the known latitude to deduce the declination—applying equally to sphere and plane; that upon the plane a common apex cannot be found for two or more triangles obtained by observation from different stations, N and S latitudes being considered separately; upon the sphere the parallelism of all lines to any given point in declination, which necessarily includes the position of all objects in the heavens, precludes the possibility of obtaining the necessary triangles.

Hence we are able to state emphatically that ordinary plane trigonometry is utterly inapplicable for finding *any astronomic distances*.

The cause of the apparent displacement of an object in the heavens is a matter of distinct interest. Possibly it may result upon the operation of the law of the visual angle, by virtue of which magnitudes decrease as their distances increase; this in combination with the law of perspective which is based on the similarity of given triangles. So that the apparent elevation of an object in the heavens above earth's surface may be regarded as magnitude; as the observer recedes from the point to which the object is vertical, so its height seems to diminish; when he has receded to a distance equal to the equatorial radius, as in Fig 6, from Q to E, then the object S appears as touching earth's surface—that is, upon the horizon E Q.



Then as to perspective, if a landscape be viewed through a window pane that is viewing nature under certain limitations—the view would be enlarged or contracted according to the distance of the eye from the pane; but the distance of the eye once fixed, then all that is seen within the limits of E C (Fig. 8) is reduced to the limits of D B. Here we have two triangles which are similar, because as the ratio of A B is to B D, so is the ratio of A C to C E; that is simple arithmetical proportion. But let us note a distinction here: the artist in reducing his view to canvas is not concerned with the ratio of A B to A C, that would involve the *scale* of the picture to the dimensions of nature; the requirement is that all that is seen in nature in the triangle A C E shall be represented in the same *proportions* in the miniature triangle A B D. Now our view of Creation is limited by the bounding line of the sensible horizon. Where does the plane of the sensible horizon intersect the heavens? By Fig. 6 we have seen that the sun as S'' is invisible to an observer at E; when at S it appears in the direction E Q; when at S' it appears in the direction E N. Now excepting the zenith and horizontal directions—*i.e.*, Q S and E Q, every observation of the sun at equinox for stations between E and Q would bring the line of direction within the distance S Q, which obviously is one side of a square upon the radius E Q. To an observer at E object's between S and S'' are invisible; between S and P they have elevation; S is the vanishing point; and the plane of the sensible horizon takes the direction of a diagonal of a square upon the radius of the equator. Hence this radius is the measuring rod of the *visible portion* of the heavens, and this in the direction of their breadth only; and this diagonal line, in connexion with the ellipse resulting upon observer's eccentric position, enables us to show by geometrical diagram the length of day and night. But this is a distinct subject, and cannot be dwelt upon here; it is thus referred to now because every now and again enquiries are made upon this point as though the length of day could not be determined upon the plane theory.

ANSWERS TO CORRESPONDENTS.

All letters to the Editor must 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. All letters *must* be prepaid and addressed to

MR J. WILLIAMS,

32, Bankside, LONDON, S.E.

Thank you, Mr. Harpur, for your "remarks on the E.R. for Sep.-Dec., 1896." In reply I would say that I have read somewhere, and it is sound advice. "Wisdom is the principal thing: therefore get wisdom: and with all thy getting get UNDERSTANDING."

(1.) If Blair chooses to contradict himself that is no business of ours.

(2.) "O! the moon is a brightly-lit body" is it! Professor Fowler said it "is a dark body." Ah! well, proceed. I suppose you will inform us if you ever saw "a dark globular body brightly lit, and whether or no it in any way resembled the moon. "And owing to the dazzling of the eye." Ahem! *which* "eye" please? Ah! I see you give *results!*" "Such a body always looks a little bigger than it is." Yes, I see, but *my* eyes are not dazzling, so go on. "So that *its* edge encroaches on the surrounding space." I suppose that is the astronomer's "infinite space?" Well, what next? THROUGH THIS UNREAL EDGE OF COURSE A STAR CAN BE SEEN." How very clever! But there, go on, "To prove your case"—do you mean "your case." *We* have no case. *We* ask Professor Fowler, *not* what *you* say we asked him—viz., "How was Jupiter seen through a dark body," but "If the moon is a dark body how was it that in the occultation of Jupiter by the moon, Jupiter was seen through this 'dark body,' positively seen through the mountains, craters, rivers, seas &c.?" How is it that these Professors, these Oracles of Modern, Theoretical, Mathematical, Geometrical Astronomy answer not? I'll tell you. The horizontality of water has shaven them of their locks and their strength has gone from them and they can do nothing save it be laugh at you for being so foolish as to attempt to put a wig on them to frighten us with. No, no, sir. *We* KNOW what *their* next action will be, for their strength shall return unto them for that purpose, and that purpose only—viz., the utter destruction of the globular theory. But proceed, please. "To prove your case you must produce an instance of a star being seen either through some part of the moon far from the edge." *Which* edge, please, "*its* edge," or the "*unreal* edge?" Proceed, please. "Or through the dark part of the moon." Then Professor Fowler is wrong in saying "the moon is a dark body," eh? You contradict him and say "the dark part of the moon." Then the moon is only *partially* dark. O, you are a Harper! Well, how is this "f r being far from the edge?"



Is it far enough, or is it too near the centre? That is not "poetic licence," but FACT, for it's a correct illustration of Jupiter as seen through the moon. Permit me to suggest that you write on this subject, as you have on others, to General Drayson, Sir Robert Ball, or even the Cambridge Profes or you once mentioned, and ask them to answer this question direct to us and it shall appear in our columns.

I am glad you notice our "very absurd argument" to the Rev. D. Nield about the *immovable* sun *moving*, for it proves you are as far from a discernment of what logic and truth is as you were six years ago! To prove that an immovable sun moves, you say you were "travelling from London to Birmingham, and you and your friends were trying to see the monument at Tring, when one of them said, "Those trees will

move out of the way in a moment." Then *you* add, "So they *did*." DID they? No, they *did* NOT. The train moved, not the trees. It is an illogical and false statement, the results of scientific teaching through school and college cramming which causes men to stultify the meaning of words and sentences to explain and understand (?) a false so-called science. Tell your friends they should have said, "We shall pass those trees in a moment."

This reminds me of a gentleman who once called on me, and in the course of conversation upon the same subject said, "Of course you believe in passive motion?" No, I replied, I do not, neither do I believe in so-called "retrogressive motion." But said he, "They are facts, known facts." I should like to know who proved them to be facts. Oh, said he, that is easily done. Can you do it, I asked? Oh, yes, he replied, and rising from his chair he took from the table a book, placed it on his hand, and with outstretched arm said, "There, sir, the book is now passive. That is a fact, is it not?" Yes, I said, that is a *demonstrated* fact. Now, said he, moving his arm at full length backward and forward, "*It* moves, and that is passive motion." Then I replied, "passive motion" is made out of a fact and a falsehood, and consequently the whole is absolutely false, for nothing is so dangerous and likely to mislead as error and truth mixed. *Vide* Gen. ii, "Ye shall NOT surely die." "*Not*" is a very small word, but it changed the truth of God into a lie." "*It*" is a very small word, but it changed a fact or that which was absolutely true into a falsehood! But, said the gentleman, I showed you two facts, and you say they constitute one falsehood! It is useless talking to you, sir, or trying to convince you of the facts of astronomy." "No sir, not in the least," I replied, "if they are what you call facts. But perhaps you will allow me to explain." "Well, I must really be going," he said. But before you go allow me to ask you to think this matter over. You said 'it,' the book, 'moves.' The book did *not* move, the book *cannot* move, for *it* is devoid of life or power to do so, hence the truth is *you* moved *the* book, therefore to speak correctly or logically you should have said the book is *being* moved."

We reproduce the cutting you sent us, as Hawkins is an apt illustration of the intellectual intoxication caused by science falsely so-called. The *only* way "a fellow c-caan't help getting carried off'sh feet," is by standing upon the vast non-revolving, non-rotating plane earth.

FIZZICAL JOGRAPHY.—Autocratic Policeman: "Strikes me, sir, there's something physically the matter with you." Hawkins (who is just getting home from business at 1.30 a.m.): "Quite right, pleeshman. Shofferin' from an attack of fizzical joagraphy." Autocratic Policeman: "Physical geography, sir? What way like?" Hawkins: "Well, ye see, pleeshman, th' earth trave'sh thro' spash 't such a fearful velosity, that a fellow c-caan't help gettin' carried off'sh feet now'n again." Both lose their gravity completely.

H. SPARTAN.—We are well informed upon the points mentioned in your ever-welcome letter. (1.) Lady Blount is no more "in favour of the science of Koreshanity" than you are yourself. She says, "I do *not* yet understand Koresh's cosmical teaching, and therefore cannot give *any* opinion on it." Doubtless she has great respect for Mr Morrow, and corresponded with him *before* he became a Koreshanite. (2.) Respecting "her letter in "F. S." for January, from which you quote, "We—*s.e.*, Mr Morrow and Koresh—are grateful for her kind words . . . and commendation of the *works and writings of Koresh*." She informs us that she "wrote to Mr Morrow in reply to his invitation to ask any questions that she wished to," and adds, "He has quoted *parts* of sentences (connecting them) from my *private* letter. In course of my letter I recollect mentioning to Mr Morrow that I was not yet prepared to endorse (especially openly) Koreshanity. What I meant for publication were my questions, and Mr Morrow has kindly promised these shall be inserted! I also said he could print (if desired) that I perceived that the teaching of Koresh was in *some* things good, and even better than I had ever heard. But I was particular in reference to his educational system and social reform." Both these appear to me very excellent. (3.) Yes, we are well aware that we are termed by them "the mongrel offspring of the Zetetic philosophy." One of the "mongrels" will have something to say on this subject before long. (4. "What do we think of the 'Geodetic Rectilineator.' Will it prove us wrong?" First, we think it is the last trump card of the great adversary of mankind, but never fear, we hold the ace and king—the Word of God, the horizontality of water.

No, it will not prove us wrong any more than an "equatorial telescope" does, and it once made a gentleman exclaim, "Why! in that way you CAN ACTUALLY SEE the curvature of the earth." *Leeds Mercury*, Dec. 20th, '92. You see the instrument is made to prove a foregone supposition. The Koreshan "Rectilincator" is made for the same purpose. They assume by a "geometrical proposition" that the earth is concave, and then talk about "a rail, one or two miles long, concaved eight inches to the mile." Who made these rails, and who looked along them? We know that they do *big* things in America, but we are inclined to think that the rail 2, or even 1 mile long, is too *long* even for a "cute Yankee." (5.) Suffice it for the present that we quote their own statements, "He (Koresh) comes as the Son of man . . . as the Shepperd, the Stone of Israel . . . as the WORD OF GOD . . . the Messenger of the Covenant, the High Priest and Mediator of the age of light and life." And then it is asked, "What will *you* do with him?" For the present, "curtain."

ZETETIC NOTIFICATIONS.

Please to ask for "The Earth—not a Globe—Review," at all Newsagents, Reading Rooms, and Railway Bookstalls. To be had direct from the Hon. Sec., post free, to any address in the postal union for 1s per year, in advance.

All monies for the Society must be paid direct to the Hon. Secretary and Treasurer, John Williams. Post Office Orders to be made payable at Sumner Street, London, S.E.

We must request correspondents to be careful in addressing letters to the Secretary, as several letters have been delivered opened by other Mr Williams' living on Bankside. JOHN WILLIAMS, 32 Bankside, London, S.E., will insure safe delivery.

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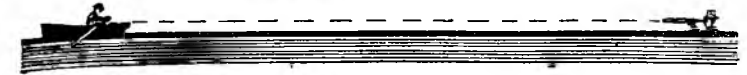
We regret that it was not stated in our last issue that this Journal would be enlarged to 28 p.p., hence the price, *post free*, is placed at 3d.

The Map we have been publishing at 2/, is at present "out of print."

Will friends in ordering books please notice that those only which are quoted on the cover of the last issued Journal are those only in stock, others having been sold out.

—THE— EARTH—NOT A GLOBE—REVIEW.

SIX MILES.



Vol. IV "Parallax" proving the Surface of Water to be Horizontal.
April-June 1884

"UNIVERSAL GRAVITATION, A PURE ASSUMPTION."

BY LEO CASTLE.

No. IX.

"THE great majority of scientific writers and teachers commonly refer to the "time-honoured and universally-accepted law of gravitation" as if they were quite *unaware* that that law leaves many very serious difficulties still unsurmounted, and that, even among men of science themselves, it is by no means so universally accepted as it once was. . . . It is absurd to hold that it universally applies to all phenomena which it is held to govern. It cannot be denied that, in the words of Samuel Laing, "The universe contains many forms of motion and many manifestations of energy, which cannot be explained by the laws of gravity. For instance, the runaway stars, the world of meteorites, the proper motions of molecules and atoms, and the requisite duration of solar heat to account for the undoubted facts of geology."

What is gravity? We are accustomed to speak of it as the one well-known and established fact of the universe; and yet of ITS REAL ESSENCE AND MODE OF OPERATION WE KNOW ABSOLUTELY NOTHING. Nay, worse! its nature appears to be so inscrutable to us, so far, that our accepted views and theories regarding it are either essentially self-contradictory, or are directly contradictory of the well-known and fundamental principles of physics. And, still worse! the blinding influence of prestige has so far prevented the great army of teachers and students of the subject from perceiving these vital and almost glaringly apparent contradictions.

What, then, is gravity? How does one mass of matter act upon another mass *without connection* and apparently without requiring time for the transmission of the impulse, however great the distance at which it acts? Is it a pushing or a pulling force? How is it so