

**The square of the circle considered under the principle of action to reaction equal / By Edward Dingle.**

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# THE SQUARE OF THE CIRCLE

BY ACTION TO REACTION.



# THE SQUARE OF THE CIRCLE

CONSIDERED UNDER THE

PRINCIPLE OF ACTION TO REACTION EQUAL.

BY

EDWARD DINGLE.

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“Let Thy work appear unto Thy servants,  
And Thy glory unto their children.  
And let the beauty of the Lord our God be upon us.”—PSALM xc.

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## P R E F A C E.

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I HAVE already produced evidence, by several lines, that the square of the circle is "Rational" against the very recent claim that it is "Irrational."

The whole question, of course, being, whether the decimal table of integers, can give to the geometrical form the absolute final fraction over the index 3.

The fact that it can be assured from a correct table of numbers I proved, on those of Chambers', in the larger work, "The Balance of Physics," but of course, having to go through the reactions of the canon of spherical trigonometry to secure, over a limited standard, the compensations of error therein. Other modes used, found the results to be harmonious to a fraction, over the integral centre of gravity, in that, and other more recent publications. This would have been all my preface, but a paper happened to come to my observation in the January number, 1894, of the American scientific periodical, *Notes and Queries*, which leads to the following additional remarks. It is as follows:—

"What is most surprising is, that each one claims he is the first person to discover such a value, they seem to forget that great men lived before Agamemnon."

This appears to arise as an observation on many renewed claims lately, by very modern seekers.

So the older, but yet modern idea of "Irrationality" is now dying out. So, well! It was an insult to divinely taught science, as the absolutely pure and "good" could never have existed in that case, as the 1st of Genesis claims it did, by the universal covenant creative order, for natural law by Jehovah.

This attack made it popular to many. The question of being the first must rest in future on who has produced such evidence for it, that men of scientific capacity, and, what is, also, much wanted, integrity, are satisfied is a demonstration to time.

That different modes may exist in proof belongs to all truths, especially primary ones; if natural law, must have a vast number of applications. The several I have before provided, agree to a fraction for  $x$ .

I am, also, aware, although only recently, that other names have  $3,142857\frac{1}{7}$  appended to their finding, but also, so it is to that of Archimedes, the illustrious Sicilian philosopher, yet it is equally made certain by Herr Herman Schubert's list that he jumped to it as nearest by all he could prove, while he, and the Greeks all, for practice, used  $\times 3\frac{1}{7}$ .

If others so accepted the same, which is true, why did the whole of the French school of Science give it up as Irrational of late years; why do we find this in the Annual Report of the British Association at Edinburgh, 1891, which I attended?

*"On Lambert's proof of the Irrationality of  $x$  and in the Irrationality of certain other Quantities,"* by Professor Glasher, B.A., F.R.A.S.

Professor Herman Schubert in a paper of many pages in the *Monist* said in 1890,  $x$  really lies between 3,141592 and 3,141593. Also, that it is impossible with ruler and compasses to construct a square equal in area to a given circle. How then can they be geometrically proportional?

But if there exists an earlier demonstration for  $x$  let it be so; we coalesce as to the pure and good of the Divine initiation, but where is the perceptive capacity of all these modern savants who could not see a demonstration, or this recent writer say, who shows it in earlier days, as proved.

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# THE SQUARE OF THE CIRCLE.

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## INTRODUCTORY.

THE principle I have adopted being by "Action equal to Reaction," is certainly claimed, for the demand on the geometrical draftsman to get a circle at all—that is, let the power for draft, by any scale adopted, be the first action to find the first semi-diameter, what it may, for the exactitude of the arc, from the place of start to its farthest point in distance where reaction begins, so, the return journey to the first point must give the exact fac-simile of the other. Thus, so far, geometrically, it is admitted that a circle must be "Rational" by its diameter to "square." On this, also, the first problem in Euclid, and all that follows, depend for their demonstrations. Hence, if this cannot be proved in numbers to numbers, by any rule of exactitude to their term values, no one could be sure of a real approach to correctness by spherical trigonometry (which assumes to unite the two orders) even if he sought the compensations of the canon. But if we find a ratio for all reactions, which will give a correct value on any numerative system, then, our object is found for the squares of both in unity. Now, this has already been presented to savants by the decimal order, unique, by me over the integers by  $1,000000000000 \div 7 = 142857142857\frac{1}{7}$  or rotation, by  $+ 0$  for ever equal, to  $3\frac{1}{7}$  or  $3,142857\frac{1}{7}$  or by two values  $7 : 22$  for all products by any diameter. So not a particle of excuse exists for its not being admitted to be settled "Rational" as,  $142857\frac{1}{7} \times 7 = 1,000000$  in reaction is perfect as a seventh over decimals. For the especiality of this treatise I have proposed to initiate the value of the diameter on that abstract root, by which all geometrical problems are held to be determinate,—i.e., That spaces enclosed are the only roots of the law, although by material units of matter needed for sight, &c., &c. Hence, by geometry to numbers, thickness and depths of lines, here, are out of court. Length equally abstract in this treatise. But for the working

out of equal lines, itself abstract to mind alone, practical spherical trigonometry demands a following accuracy for a true radius by arithmetical numbers to numbers, square. These are absolute laws for use to observed lines over ellipses also. No one doubts that the scale given in Genesis is on these principles, a correctly working order. That is the decimal order by 123456789; or, by reversible aspects, for all mass measures in space, to the final decimal, 0, being a result by its reactionary claim for all extensions of these values over 9 to 0, for all natural properties. Also, that it has no right, or rule to be reached, except by an over all, used numeral, as a multiplier, running through the whole line to produce a practical convulsion, to change every figure, as applied fire can under fuel, by the new supplies of the engineer, which must be absolutely qualified to its massed value for all the changes, for proper use in the "good" of results by his previous existence and mental judgment.\* The following table has been in my print before as derived, thus:—

## 1st Table.

$$\begin{array}{ll}
 1,000000 \div 7 = 142857\frac{1}{7} + 0 \text{ for ever.} & \\
 142857\frac{1}{7} \times 2 = 285714\frac{2}{7} & 142857\frac{1}{7} \times 6 = 857142\frac{6}{7} \\
 \text{,,} \times 3 = 428571\frac{3}{7} & \text{radius } 7 = 1,000000 \text{ square} \\
 4 = 571428\frac{4}{7} & 8 = 1,142857\frac{1}{7} \\
 5 = 714285\frac{5}{7} & 9 = 1,285714\frac{2}{7} \\
 \text{growth} = 10 = 1,142857\frac{3}{7}, \text{ \&c. \&c.} &
 \end{array}$$

Hence, first, our nucleus, the integers, must have a uniter and multiplier, new, to start at all for reactions of equal forces to equal, imputed lines, off, by terms only, to terms, as subject to eternal division of half to the whole by 2, is symbolical to a sheer boil. But if for a united bond to rotate wholly as of one mass in one direction, then, to be set as a factor to work with factors; also, duly "made and set" to the union of law, as all engineers find by mental design. No locomotive invention is worth trusting except by this law. The selection, by experiment to turn native latent agencies by mental judgment into a new connection off their natural course inlaid is certain.

We will carry out this agency of proof further by the last.

## 2nd Table.

$$\begin{array}{ll}
 142857\frac{1}{7} \times 70 = 1,0000000 & 714285\frac{5}{7} \times 70 = 5,0000000 \\
 285714\frac{2}{7} \text{ ,, } = 2,0000000 & 857142\frac{6}{7} \text{ ,, } = 6,0000000 \\
 428571\frac{3}{7} \text{ ,, } = 3,0000000 & 1,0000000 \text{ ,, } = 7,0000000 \\
 571428\frac{4}{7} \text{ ,, } = 4,0000000 & 1,142857\frac{1}{7} \text{ ,, } = 8,0000000 \\
 & 1,285714\frac{2}{7} \text{ ,, } = 9,0000000
 \end{array}$$

\* "Balance of Physics," page 80.

The one by one rule, for a multiplier, under one by one in them is here significant enough as to the exact fractional growth and order initiated, for a system to law, by "weight to measure," and was ordained for to a fraction. The units primal in flood, the centrifugal power for ever. So such an over all additive for ever by the lightest value integral, must be set to ingraft itself as every multiplier in a boy's sums is supposed to do. But where the mass is intended to be ingrafted to a rule for a factor to rotate as one body entire, forward to one line for ever to its power, and the check divisor for values attained, the nucleus itself, must be set off the mere working order of terms to terms, although subject to them for the divisional order of its hemispheres of distinction, and so also that other factors set into the gravitational connection shall have receipts from the first, to carry on by the firsts radiations, its own power similarly under a ruling medium to its pressures over all. This, to secure correctness, demands that every fraction in each body should, from the first, be set to gain and keep its own truly arranged order for its angle of rotation, and by a practical medium for its proportional revolution, and so, by mass to mass, right through the whole body. Then to get our two numbers, which Herr Schubert said it was impossible to find, we have—

$$3,142857\frac{1}{7} \times 7 : 22,000000.$$

$3,285714\frac{2}{7} \times 7 : 22$ , and so on by all fractions true for ever. By the mutual axial angles of the Sun, the Earth, and the Moon, I proved before, has been done in their make.\*

---

### EVIDENCE BY DIAGRAM.

Most of the efforts I have seen have been pursued on a rule to find the final fraction of a unit, or what is the same thing, the final decimal value by + 0. Both being illimitable, it might have been at once seen, must end in the "Irrationality."

Our present mode is to be on the pure basis of Euclid—*i.e.*, that enclosed spaces are without question as to depths and breadths of lines. Distances and all to be taken at the value of numbers to numbers only. All abstract. All other points (however needed to us for sight) out of count.

Our numeral root for distance to numbers will be taken from that Sabbatic 7ths, on reactions of the circle under it for the diameter in

\* See "Balance of Physics."

test, Scripturally taught. Hence, the value for the compos by the power of draft must be  $3\frac{1}{2}$ , as the presented standard, expectant by a scale finite in the measure of space used, so enclosed. Whether this is, or not, found by any scale, English, by our inch, or other national rule, is of no import here. It certainly must have a scale reality. So whether our diagram, presented by that used in the earlier work, is exact, or not, does not matter to us by our draft for it, apparent, but to be abstract.

By this rule  $A C = 3\frac{1}{2}$ , we have a circle, subject in A E B D; and so, by 7 for the diameter, equal to unit values for diameters of minor circles seven, by unit ratios of parts to part on this diameter. Also, as circles are proportional to their diameters, the seven circles on the semi-diameters must find diameters for double sized circles at units major, by the diameter, as sized to the whole in claim. What we want is to find the value in circuit of the chords to the arcs, so giving a rule absolute for the gain over the six semi-diameters equal to  $3\frac{1}{2}$ , the draft power, as chords enclosure power, for the circles to its greater degree over chords. So we proceed by  $3\frac{1}{2}$  for the scale from the point E or D of the equal right angular diameter to A B for the six chords,  $3\frac{1}{2}$ ; and although it is well known to prove, they equally divide the circle into six equal arcs of equal rise and fall, we, also, demonstrate it here.

These six chords are equal to the semi-diameter, each, by its value  $3\frac{1}{2}$  adopted. Hence, by straight lines from the points of contact to C, the centre, we have six equilateral triangles of three angles  $60^\circ \times 3 = 180^\circ$ . Hence, at the centre, they must be admitted to emerge from C, as  $60^\circ \times 6 = 360^\circ$  the horizontal line entire. To these values all circles conform.

Thus, to pure geometry the canon of spherical trigonometry demands the finding a set of integral carriers abstract also which shall give the other values, under their equal action to numeral reaction, and which shall provide true values for all other angles, into which the circle from C may be divided. The charge against the circle to be "Irrational" to its square, demands that no such a set of integers exist. So all then fails of the perfect. Now, the enclosure power in space for equal holdings of unit values of matter is by  $3\frac{1}{2} \times 6 = 21$ , the Hexagon. Having drawn the proportional square over this circle, described also, we have  $3\frac{1}{2} \times 8 = 28$  with the diameter  $3\frac{1}{2} \times 2 = 7$ . The square ZZZZ being of four right angles of  $90^\circ$ , divided by the diagonal line from C with  $90^\circ \div 2 = 45^\circ$ , has its power by action to reaction also standard from the point of start inclusive. Hence, if the square is proportional to numbers by fractional parts, rational, so must the

circle be, by divisions of angles therein of parts, or all squares become "Irrational." Also with all straight lines as diameters. We, now, extend our diameter A B in both directions, by equal values from C, adding one for the power of draft in each for a new circle by C1 to C2. The one double, the other treble A B, and draw the proportional chords to arcs therein for the hexagons and squares thereof. These give the same proportional results, "Rational." We have now three circles true to the base  $3\frac{1}{2}$  for a draft power; and all changes, by the hexagonal figures and squares, carry evidence, that all, by their diameters, must, also, remain proportional for the spaces held; or of mass values of equalised matter for working by forces, set on decimal proportions; as properties held for reaction back to one from 9, 0, the new space representatives taken in, or subtraction from addition. Then, as all these extensions of the first diameter, by its semi-diameter  $3\frac{1}{2}$ , retain proportional issues to the first, so the proportional values of the spaces between the chords and arcs remain to that of the first diameter, on test, being, thus, able to retain the Euclidean proofs, that circles are proportional to their diameters, hexagonal figures inscribed, and squares described, by a base unique.

Hence, all these points remain "Rational," and demonstrative by numbers to numbers of reacting powers also, as of an order, by heat to cold, or removal to rest, found to work and act freely, by action to reaction by all fractions over "measure to measure" and "weight to measure" and on terms by a true medium over all.

But as the rule is admitted that all circles are true to be circles pure, when so constituted by their semi-diameters, to any scale for rights of enclosure power over empty space; yet, it is equally certain and admitted by all savants, that those on different measures for their diameters are not of the same shape, absolute.

The extent of the belly swell, differs, by its approach toward the straight line of the chord it is on, or, that of the square over it; and that this alteration is a value by the exact fractional difference of the diameters. Hence, to attain the straight line is "Irrational," as all parts of the circle must be parts of a constant curve large or small. So, as the diameter extends, it becomes more concave over C, and hence, when the diameter is less, more curved. But equal proportions of each to each division remain by compensations of length to depth, between chord and arc.

Our point is to find whether by these resources we can approach a standard value for the circle's enclosure over-power, to that of the hexagon by three semi-diameters, to six for the whole diameter.

For this we have adopted necessarily, that root of the provided

Biblical synopsis to all science in the first of Genesis. A just difficulty points to a just solution, especially by a key provided and efficient. Working on these points we find that under the rule of a flattening tendency of the arc to the chord, that although, as the diameter enlarges, the spaces enclosed between the chords and arcs are greater as a whole, yet that the breadth for a measurer equal, to any standard, extended distances, such as to C the main centre of all, is becoming less as the diameter increases.

This must be on the proportions to every fraction added to the diameter, or less than on a minor diameter for seven to C. For the tendency to flattening of the circle's curvature, must be proportionately altering and reducing this proportion of that depth, by its degree of the line of the chord strait, by its greater measure. The additional increase of the length of the semi-diameter being the rule for the increase of the space in length between the chord and arc, also keeping the proportional ratios for the value in the spaces held between chords and arcs. For on no other grounds could the lines from C, for the hemispherical values divided by full extensions through all of the three equilateral triangles, to six for the whole, do for the claim to proportion them to three of  $180^\circ$  entire, as these lines reach to the point of contact of each chord and arc. Thus, the change in greater length of the enclosed spaces, between chord and arc, makes up the loss in depth so proved. So, as the diameters decrease, these depths between chords and arcs are increasing, for finding a definite ratio between the chord and arc, to carry one between the chord and arc, by a unit value as to the number of the same measure, between the chord and the centre, as the processional change in the circle's curvature toward it acts for such a depth by one. Also, as circles by diameters, may go on by fractional reductions of diameters, *ad infinitum*, all degrees of these ratios must be open to occur.

So, as our diameter is by  $3\frac{1}{2}$  to command these numeral divisions between the chords as semi-diameters, by three depths between chords to arcs, and the remainder between the chord and the centre may be divisioned into six equal parts of the diameter, to leave one over for the ratio of the circle's curvatures equal to them, each; so our processional increase of the deficiency for the power between the chord and arc to measure to C by seven such depths has an increasing tendency to find a diameter that will provide one of the seven between a chord and arc.

Now, the centre C is one and the same, as centre to all the circles. So the deficiency in the depth between the chord and arc, is to reach by any numeral unit ratio to their own centre; but as the circles

decrease by the reduced length of the one whole diameter, there is a tendency to find a ratio for it, that will as a single diameter find the depth between chord and arc, for a unit measure on its own value for a unit ratio thereof, between the chord and arc by three changes motive altogether. For all three variations alter for this in breadths, depths, and lengths together, from the incapacity toward capacity, in all fractional variations of the diameter. Also all variations are proceeding under unit fractional ability, by a diameter, of an order in sevenths by the ratio  $3\frac{1}{2}$  for the power, to divide the value of the circle's curvature, given, between the chord and arc to that rule, and so, from it all the variations of the deficiency to find a reach to C, by seven of such distances on the same centre, have proceeded by the processional extensions to any degree for larger circles; and so, the reactions must be to return by less diameters, to alter the depth of arcs back to the claim, by a further successional variation for a greater depth of the arc in overplus, for the curve to find such a unit ratio between the chord and arc, as to be equal to one each of the divisions of the diameter, for six to the centre from the chord to the arc. As of  $3\frac{1}{2} \times 6 = 21$  to  $+1$  only  $= 22$  to 7. Now our three values between the chords and arcs are descending toward the depth to be found between the chord and arc of seven diameters, and they must pass through that, before reaching, by a diameter less than by  $3\frac{1}{2}$ , the power for seven diameter, to a new depth. By this diameter, if the changes in the curvature of the circles rule these depths, then, by so reaching a less diameter, a change in the curvature must again take place, and the depth between the chord and arc will be, by the rule, to reach C, greater than that by seven, diameter; and so pass from a depth which can leave one between the chord and arc, on the whole division of the semi-diameter, equal to each of six between the chord and arc, to be a standard for all. For to reach to the changes by more minute diameters than one of seven of a scale in space cannot be refused; and so, on the same principle of changes in curvatures, a processional *ad infinitum* of reduced diameters must find a distance between chords and arcs, in an increase of proportional depths above, measuring by seven to the centre C only, instead of less. Thus, on the small, for a scale for a beginning in a covenant for the proportion of the finite to the finite, such a degree is found. For a scale of seven abstract in space, which will not allow of a larger one to exist against its claim (however truly any diameter may be divided into seven or other numbers of equal parts), because the ruling order being of circles by curvatures to find their values, or semi-diameters for their powers, could only keep their proportions geometrical and enumerative



together, by their inscribed hexagonal figures and described squares on any other rule of proportion, than by a small abstract ratio of a measure in space for the first standard, and a circle by diameter  $\times 3\frac{1}{7}$  for the circle, but with leave for existence in smaller ones under it also.

Now to the objector against this necessity, geometrical by law, for the finite to get a root value in a straight line on space, for a start in Time by additional fractions, on unit proportions; it is of no use to say any circle may be divided into seven equal parts of the diameter; for no circle but will, if on a diameter larger than by  $3\frac{1}{2}$  the power of draft, for seven the whole settled, unity circular at first use,—give but a less depth between the chord and arc to measure by seven to the centre. No circle less, by a less diameter than seven by  $3\frac{1}{2}$  the power, but will give a greater depth than needed to reach by seven of them to the centre, for in the one case there will be a fractional deficiency in such depth in the chord to the arc, and in the other a fractional overplus.

So, the revealed value central, for all things small or great, to carry their circulating rights for properties inceptive to birth and life, as they have the connecting links chemico-electrical for the ellipsoidal ratios of exchanges between heat to cold in power, or its loss, is on the Sabbatic standard for the action of all the matters connected together, as “small and set” to this rule for the first parentage.

An open way is, also, provided for the changes in the decimal fractional deposition of soils on the earth's own surface, operating to find all the minute advantages to get out the most refined differences to “make and set” together; or, values equal to give to the enclosure forces of the refined fluids and gases of life, the compressing crusts of the back of the flea and the limbs for his proportionately immense intensities of spring, with the fibrous tensility of the wings of the dragon-fly, and all the minute divisions of the infusorial, and microbes of modern discovery, as well as those of astronomy,—*ad infinitum* at the Divine will by a covenanted use. But we need, as yet, to attend to the same evidence for the ratios of the sustained proportional certainties of the described square ZZZZ, for 10 of the same depths between the chord and arc, under  $3\frac{1}{2}$  the power of draft, for the mutual values to the circle by the diameter of 7ths over 10ths for reacting fractions to reach to C.

For, as the curvature of the circles decrease in intensity they can approach to the straight line to lose power by the diameter's greater extensions, so the extensions of the described square find, that by 10 of the depths of the chord and arc, each fails to reach on the diagonal line to C, but seeks to reach it by reductions of the power for it.

That, the rate must be proportional to each other, is, also, certain, because both the squares and circles are bound to the same centre, and the same root for a diameter first by 7 for it apparent. By the same original cause in the changes of the curvatures to approach nearer flatness both are ruled, and being of one for united values, by their points for leaving the line of progress for a new line, to get by those successive of four, for the square into the reaction, to reach the first point of start again, as the hexagon by six chords to arcs does, the one by  $60^\circ \times 6 = 360^\circ$  the other by  $90^\circ \times 4 = 360$ , so, to preserve their claims by the horizontal circle, the ratios of profit and loss between the values of the depths of the chord to the arc must exist at the same rule and rate. For, as in the one case the tendency was to return from the larger diameters to find a seventh between the chord and arc, to measure the difference of the circle's enclosure on a unit proportion to that of the hexagon, by the six arcs over the chords; so, here, the tendency is to proceed to reach to ten for the diagonal line to the centre, under the same measures, that of the increase in the curvature of the line of the arc over the chord by the same standard diameter. And ten has 3 on 7 over it, typl of 3 persons squaring all from above. Also, as in the one case a diameter of less value must increase the power in the depth of the chord to the arc, to find it passing over that of a seventh, to measure to C, by being too much; so the same must find this depth by a less diameter to measure by 10 of them to C, on the diagonal line, whose whole distance is also ruled by the diameter for the circle by seven. Now, when a line is ruled to reach a point on distance to get the square, it must alter its further extension to a line of no less in degree for a right angle by four such under  $3\frac{1}{2} \times 8 = 28$ . Thus, the geometrical ratio in numerative extensions, by its diagonal line for  $45^\circ$ , the half the right angle, makes it a standard under enumerative rights, for the extensions of the unit ratios reactionary, as of enclosure powers, or for another "Birth" of unit ratios, in rotative enclosure for us, to claim by legal growths of units of normal ratios, to demand more space by 0, its representative, as of light the power over all. So, the diagonal line having past the 123456789 to reach another, finds the reactionary claim to return by the unit again, with this representative 0; for no further extension of the straight line, by 7ths for the diameter, under the certain fractional variations over a definite value absolute; to become that for a finite measure in a scale found, for all such changes, as by numerals to lines geometrical by them, for getting all proportions and lines so invariably attended to, as by a covenant set by Him of the abstract rights of the finite to the finite, under all properties inset, to

carry on by a rule of abstract justice, weight by measures, rotative and revolutionary, under the mass proportions to the sphere or its proportional, the spheroidal and practical.

Hence, here, we get rid of all the modern unscientific fancies of space being filled with some etherial fine matter, as though savants had never heard of the ruling agency of attraction or gravitation, which must be then at work on infinite lines, alike at draft, to reduce to *nil* the claim for proportionate pressure on any finite values.

The rule set in the Bible is the only true one, for such a law, as subtraction to addition, equal in claims by proportions. The finite must start on a standard—finite, to be at rule at all by 7ths over 10ths.

Hence, we have now before us, the simple fact of all experiment, that a standard in space (itself infinite) must be first made and be finite, set to act on changes of proportions first by one small, for any idea of skill and power by a covenant of law, under numbers to numbers, by an order enumerative, on new enclosures over space, open to occupation for it, and by a scale, both to size, and its exchanges reactionary to law, as by subtraction against addition, under a multiplier engrafting its values therein. For  $1 + 1 = 2$  followed only by  $2 - 1 = 1$  leaves no progress at all. The life-giving motor must be subject to keep its degree of holding, in the entirety and proportionately of the subject. So matter, in the eternal amplitude of space outside the creation made in it, can have no attractive self-element, to draw or press off the radiations over the centre, final, of the universe, like itself in law, natural, to denude off it, its evidence to being, carried on by additive proportions of changes and progress through time. No memorial records could live as astronomical, or remain geologically dead by other, than all proportions being of the finite, by the finite for ever, by this covenant of rule. Why was the law we call universal over all nature set at work, which we call attraction, if it was not to bind together all parts to unite by its constant action on a sheer centre of space, itself at the builder's use, yet "nothing," Job xxvi. 7.

## PROOFS BY ACTION TO REACTION UNDER THE INTEGRAL FORCES.

WE will start on the more simple rate belonging to  $3\frac{1}{2} \times 6 = 21$ , found by our standard hexagon formative and geometrical, and over the simpler line of the integers.

21 : 7 :: 123456789 : 41152263  $\times 9 = 370370267$  the same as  $\times 3$ .

|                        | Reaction.             |                      |
|------------------------|-----------------------|----------------------|
| 370370367 $\times 2 =$ | 740740734 by 7 : 21 = | 2222222202           |
| „ 3 =                  | 1111111101 „          | = 3333333303         |
| 4 =                    | 1481481468 „          | = 4444444404         |
| 5 =                    | 1851851835 „          | = 5555555505         |
| 6 =                    | 2222222202 „          | = 6666666606         |
| 7 =                    | 2592592569 „          | = 7777777707         |
| 8 =                    | 2962962936 „          | = 8888888808         |
| 9 =                    | 3333333303 „          | = 9999999909         |
|                        | <u>16296296148</u> „  | = <u>48888888444</u> |

By division of these sums we get 3,0000000000 our index number for ever to the circle's square. Units thrown out. Thus, the reaction, integral, has thrown a line for 0 by the dual integer, to be a ruling factor over all for ether.

If we reverse the integral setting we have  $987654321 \times 3 = 2962962963$  like as by  $\times 8$  above. This multiplier being the ruler for the multiplying power of the square by  $\times 2$ , the diameter of the circle also. But by  $\times 7$  direct  $= 123456789 \times 7 = 864197523$  in which are all the integers replaced ; and  $123456789 \times 9 = 1111111101$  as also of  $\times 3$  above.

As to our final column for the sum total, we get entirely from 2, to the great reactor *g* for exchanges by ether, under entire descent

regularly. We shall next test the 21 to 22 by 7 over the major line of the integers.

The music of the upper as well as the lower spheres exists to the ear of the Deity, as well as the finest sight, when all proceeds well to His setting alone.

$$\begin{array}{rcl}
 21 : 7 :: 987654321 : 329218107 \times 9 = \\
 2962962963 \times 2 = 5925925926 \text{ by } 7 : 21 = 1777777778 \\
 \begin{array}{rcl}
 \text{,,} & 3 = 888888889 & \text{,,} & 2666666667 \\
 \text{,,} & 4 = 11851851852 & \text{,,} & 3555555556 \\
 \text{,,} & 5 = 14814814815 & \text{,,} & 4444444445 \\
 \text{,,} & 6 = 1777777778 & \text{,,} & 5333333334 \\
 \text{,,} & 7 = 20740740741 & \text{,,} & 6222222223 \\
 \text{,,} & 8 = 23703703704 & \text{,,} & 7111111112 \\
 \text{,,} & 9 = 2666666667 & \text{,,} & 8000000001
 \end{array} \\
 \hline
 130370370372 & & 391111111116
 \end{array}$$

$$391111111116 \div 130370370372 = 3,000000000000$$

The greater power for exchanges here appears by the columns down :—

$$\begin{array}{rcl}
 22 : 7 :: 989654321 : 314253647 \frac{13}{22} \times 9 \text{ the true rotator.} \\
 = 2828282828 \frac{7}{22} \times 2 = 5656565656 \frac{14}{22} \text{ by } 7 : 22 = 1777777778 \\
 \begin{array}{rcl}
 \text{,,} & \times 3 = 8484848484 \frac{21}{22} & \text{,,} & 2666666667 \\
 \text{,,} & \times 4 = 11313131313 \frac{4}{22} & \text{,,} & 3555555556 \\
 \text{,,} & \times 5 = 14141414141 \frac{13}{22} & \text{,,} & 4444444445 \\
 \text{,,} & \times 6 = 16969696969 \frac{20}{22} & \text{,,} & 5333333334 \\
 \text{,,} & \times 7 = 19797979798 \frac{5}{22} & \text{,,} & 6222222223 \\
 \text{,,} & \times 8 = 22626262626 \frac{12}{22} & \text{,,} & 7111111112 \\
 + & \times 9 = 25454545454 \frac{19}{22} & \text{,,} & 8000000001
 \end{array} \\
 \hline
 124444444446 & & 391111111116
 \end{array}$$

Here 2962962963 by 7 : 21 = 8888888889 & 987654321  $\times$  9 is the same  
 2828282828  $\frac{7}{22}$  by 7 : 22 = do. True responses.

$$\begin{array}{rcl}
 391111111116 - 124444444446 = 26666666670 \\
 \text{,,} & \div & \text{,,} & = 3777777778
 \end{array}$$

By the minor current, from 1 to 9, we had seven repeats of 8 under the last quotient in succession. By the major by  $\times 3$ , first column. Here let it be remembered, that by 7 : 22 we have to pass through each fraction found, which is not the case by 7 : 21. Yet left-side variations are from 1 to 8; on the right are 8 to 1; and so remain in both cases down, under entire central reversion between

of 7 to 0; also, from above,  $130370370372 - 124444444446 = 5925925926$ , corroborations complete for 7 : 22 to carry the square of the decimals. The contrasts in the successive lines above show a greater circle effective feature to that of the minor line of the integer, yet by a root to square.

If we use 21, the value of enclosure by the six chords, and + one for 7 : 22, or, as we have to test the reactions by 22 : 7, we get  $22 : 7 :: 123456789 : 39281705\frac{1}{2} \times 9 = 353535350\frac{7}{2} \times$ ; so by equal reaction to the action we have always our ether ratio— $353535350\frac{7}{2} \times 2 = 707070700\frac{7}{2}$  by 7 : 22 = 2222222202. This at once carries a proof that by any diameter for the circle under it, the decimal order has the force of true circle powers over it—*i.e.*, must carry between 1 to 9 by 0, the reactionare, a square of the circle, or otherwise it could not take the place of being fit for pure arithmetic, as attraction to get up motion—*i.e.*, for a multiplier equal to the subtractive value in the integers; or, in parallel forces as to value between heat and the return to inertia as set down, a precipitated agent of waiting for the continuing supplier of motion.

In the above case,  $353535350\frac{7}{2} \times 10 = 3535353503\frac{4}{2}$  by 7 : 22 = 11111111010, accurate growth by the new claimant for more space. We return to  $123456789 \times 9 = 1111111101$  by the true square.

Growth is also aspirated by the degrees of the internal addition of the 0, as the pressure on them claims a need of more filling by an enlarging lungs demand on either air, ether, and light, the new supplier for internal hollows, or 0, a higher thirst for food. Then, as the final fraction by heat is thrown out by the whole and final pressure to the surface with empty space next to it, all cools, as the cover over a vessel does under heat; and makes the unit of fractional, fluid unit drops unite, to fall by the internal reaction of attraction to coalesce; which, as the last entirely to the last next, preserves the reactionary value, all of dual globular to be of the final columnar imperator, the first heaven, so required to start for a common divisor of light, the unit in flood supply of excitement, into vital life circulative, so long as it is supplied new from over all. Without it, a tendency to utter collapse in finality; and unless such an ethereal heaven was at first supplied as a common divisor, no rule of three direct could exist for factors to be proportional by, to time and space. Mass, must, to law, regulate mass, not vacuo.

The tendency of rising radiations to form into a crust, as not kept at equal changes, by the ellipsoidal arrangement, provided the land series by settlements fall in round.

Undoubtedly, if we use a unit alteration only on the first term, such as by the one to one addition in

$$23 : 7 :: 123456789 : 37573805\frac{5}{2\frac{2}{3}} \times 9 = 338164248\frac{3}{2\frac{2}{3}} \times 2 \\ = 67638496\frac{6}{7} \text{ by } 7 : 23 = 2222222202 \text{ as before.}$$

But we cannot alter the 7 by a fraction, as all aspect then in the column will be thrown into confusion except by =, an equal reaction by the same.

Thus, by the use of the first reactionary multiplier 2, and the last 9; but if we lose the 9 all is over.

$$22 : 7 :: 123456789 : 39281705\frac{1\frac{3}{2}}{2} \times 8 = 314253644\frac{1\frac{6}{2}}{2} \\ \times \text{by } 2 = 628507289\frac{1\frac{0}{2}}{2} \text{ by } 7 : 22 = 1975308481\frac{1}{7} \text{ we get}$$

a fraction at once, and all is off any line of order, except as to mere terms to terms used. It is not of the circle to diameter in demand of a form geometrical, for a rule over factors to factors, by a pure settled value of map to map connectedly at all, on a proportional setting of all parts, to carry a true working ellipsoid of proper proportional axial values, for time to distance, such as Nature is known to present by Kepler's three laws, by place, rise, and fall to depths in ether.

But the square of the circle to be 7 : 22 is easily settled in the reactions of integers. Thus, against the  $3\frac{1}{2} \times 6 = 21$  to + 1 = 22

$$22 : 7 :: 123456789 : 39281705\frac{1\frac{3}{2}}{2} \times 5 = 196408527\frac{2\frac{1}{2}}{2} \\ 7 : 22 :: 196408527\frac{2\frac{1}{2}}{2} : 617283945 \times 2 = 123456789,0 \\ \text{also, } 21 : 7 :: 41152263 \times 5 = 205761315 \times 2 = 411522630 \\ \text{by } 7 : 21 = 1234567890. \text{ We cannot alter either for the ratios used.} \\ \text{Also, } 22 : 7 :: 987654321 : 314253647\frac{1\frac{3}{2}}{2} \times 5 = 1571268237\frac{2\frac{1}{2}}{2} \\ \times 2 = 314253647\frac{1\frac{3}{2}}{2} \text{ by } 7 : 22 = 987654321$$

Thus 22 : 7 the circle to 21 : 7 the Hexagon's enclosure power carry the square of the circle as truly over decimal divisions as 9, by 2, in half to half; and 5 for a standard squarer as well as them. They work together on it for equal squares thereof, as co-efficient.

If we connect any other figure except these divisors, equal of 2 and 5, we find the square is lost for the integral sections.

For instance, 4 is a proportioner to the cube with 8, and so will not act with 22 : 7 and its unit variation. Thus, if we use 9 we get

$$314253647\frac{1\frac{2}{2}}{2} \times 9 = 2828282827\frac{2\frac{0}{2}}{2} \times 2 = \\ 5656565655\frac{1\frac{8}{2}}{2} \times 22 = 124444444428 \div 7 = \\ 1777777778\frac{2}{7}. \text{ A noble return of the Sabbatic num-}$$

ber, but running into a fraction also, for a breathing successional hope of life to the coming surroundings at the gravitational succion draft.

But we have a further test, which no other ratio can match, on the return aspects from the derivative standard  $1,000,000 \div 7 = 142,857\frac{1}{7} \times 10$

$$= 1,428,571\frac{3}{7} \times 10 = 14,285,714\frac{2}{7} \times 10 = 142,857,142\frac{6}{7}$$

$$1428,571428\frac{4}{7} \times 10 = 14285,714285\frac{5}{7} \times 10$$

$142857,142857\frac{1}{7}$ . Thus, on the decimal order in full rotation multiples, carrying the same as + 0 for ever to the unit 1.

But, further, how will this work with the index 3?

$$3,142857\frac{1}{7} \times 10 = 31,428571\frac{3}{7} \times 10 = 314,285714\frac{2}{7} \times 10 =$$

$$3,142,857,142\frac{6}{7} \times 10 = 31,428,571,428\frac{4}{7} \times 10 =$$

$$314,285,714,285,5 \times 10 = 3,142,857,142,857\frac{1}{7}$$

This is a test it is impossible to contend against, for giving the square of the circle in  $3,142857\frac{1}{7}$ .

The lightest fractional alteration must alter the return-finding of the index value in exactitude with successions true.

If any one, besides, has provided such a ratio in demonstration well; but let us know how and when, and if correct, how the value was not before admitted.

It shows that a system, such as having this for its working base throughout, in practical science, proves it has been and must develop the "good," and that any fractional abuse *en courant* by man must lead to successive growing catastrophes, elemental, below, and above.

## SOME POINTS OF INTEREST.

IN regard to the testimony in the first sentence in the Bible, to give a name to the earth, before her nucleus fluid state, inert in herself, and without form, was melted, as light by heat always works toward a globular form, we must have that setting such as was needed, to get her rotating axis, as it has ever existed, developed for her day and night reported distinctions. A true factor in life. In an earlier work, I proved by astronomical evidence, that it approached near, if not exactly, to the line value to be thrown out into the heaven, as a directing medium, by 9896543 of fluid globules normal to all rights. I ought not to need repeat here from earlier works; but many may see this and not them; and there are additional points to notice, not in them. Now, no part of our coinage, although made of different material, at different degrees of supply for values, can be made and set for a general system, unless both points are attended to, and yet so that the decimal order will give to the degrees of exchange,



the values by the axis of variation, so needed to be set for it in each mass. So, for practical action by any natural force, all the parts of a globe's bowels must have been set, to work the rotation; or, otherwise such great internal convulsions, as we know of, must have disturbed any single property settled in them, such as circulation against dead weight, as either for rotation or revolution demanded. You can have no disturbing cause in nature without its effects are felt throughout. This true state is needed for all seed. If disturbing causes exist on the rotation, there must be a self-balancing system in the setting of the rest. No engineer but that he knows this, and under a medium, air or ether, or both. Thus, our diagram presents this, as from an extension over space for the most telescopic subjects of observation with those within of rising gases for lightness in ether, microscopical or from the earth's surface deposits latent. Those needed to exhibit the inlaid resources of the soils for the most minute elements of animated life, microscopical, at use to the selecting mind, which must exist to turn it into a new line of combination by soils of deposition. Then, using 9876543 for our first nucleus with the needed ruling hydrodynamical medium of dual-globules to act in volume disturbed by the needed flood of units of light, to reach the primal centre, this nucleus gives us the centre of gravity instead of by  $1234561\frac{1}{2} = 22$  to  $5\frac{1}{2}$   $89 = 22\frac{1}{2}$  of  $45^\circ$  for the base, of its squaring power, under the diagonal line, Z, for half the  $90^\circ$  final, we have  $984 = 21 (: 7)$  by  $36543 = 21$  as a factor still subject to work by terms as all must. This gives us in 984 a condensing power on the elliptic claims, operative amongst the integers, for a denser northern heat-retaining settlement, to provide the axial angle of rotation in a degree of greater force than  $22\frac{1}{2}$  for  $23^\circ 27'$  found extent, and with this to vary the two hemispheres in their summer and winter divisions, and, also, the degrees of land between them to that of water. For in either case the condensing settlements by light the quickener for heat to the settling divisor, must allow the two values to vary; and so we have 4 to 3 to find between them, the fractional reaction of heat central to its loss. That is on a fraction of a unit under decimal rule remaining over all. Thus the boiling lavas of the heart of the earth are intensified.

Also, as the pure circle is left to these variations, by the integral ratios of mass to mass decimal, so while the loss of heat to our circle involves the form of a crystal in the hexagon the form given on the centre of gravity by 9876543 must tend to develop greater variety at metallic coolings of crystals. So, to use, for this nucleus, only needing to be out of the standard run, or "without form" direct yet for terms to terms to rule. We have compared this with Professor

Lynn's values from the Greenwich Observatory for the marriage settlement of the sun to the earth in the earlier work by Lynn.

| Earth's Ecliptic.  | Sun's Ecliptic.    | A Year.             | Earth's Nucleus. |
|--|--------------------|---------------------|------------------|
| 23° 27'  |                    |                     |                  |
| Lynn's 84420" : 26400"   | : : 31472014½"     | : 9841994           |                  |
| Ours „ : 26492 $\frac{10226682}{31472014\frac{1}{2}}$ : :                                      | „                  | : 9876540           |                  |
| Moon's Anl. Angle.   | Sun's Axial Angle. | Moon's Equal Times. |                  |
| 6315 $\frac{28910637}{31472014\frac{1}{2}}$ " : 26492 $\frac{1592250}{2354219\frac{1}{2}}$ : : | 2354219½"          | : 9877149           |                  |

This will show present readers how closely those values (found by myself on other data to that astronomers had used to get them ; but by me learnt from the first of Genesis, as a divinely provided synoptical key to all science), approach results by them ; although, of course, I used their estimate of the orbital times, &c. With such as these evidences, so closely approximating between the Sun's, Earth's, and Moon's axial angles, a host of other proofs were provided in the "Balance of Physics" and other works. Whence the enmity to refuse to own them? Was it loyal to science or only of Darwin and the other Evolutionists against the Bible, preferred? Our leading feature is the proof that the earth was first fitted to be the intermediate standard, primal, to have, as the fourth day of Genesis states, the Sun and Moon, so "made and set," that their vast forces are to balance the earth's motion and times, between their attractive forces in gravitation, entire, which all astronomers admit and use, and the forces to keep them separate from danger against its certain action at all times. The Sun's light by heat being the newly given resistance, for it to both, as between the revolving powers for day and night in a true acting Heaven etherial by displacement of it. Then the stars, to perfect the same by stability entire, and not to disturb it by their known influence in attraction to coalesce or dash for ruin, thereby otherwise certain.

### MIND AND MATTER, THEIR PLACES.

THERE is no need for me to mince the matter as to the place or persons who have misplaced the true order of precedence of these two claimants for order, with power for results.

It is well to know that there are, and have always been, others of first-class ability as naturalists and experimentalists who have not held the ideas of Darwin and others, of those called Evolutionists (by a misused title), as no evolution of nature could take place new or old

if the elements employed had not had someone with mind to arrange for their procedures.

Others were as great naturalists as Darwin, and had the better powers of judgment on the primary causes needed to get up artificially sought out results by experiment, and so of previous natural ones, so called the truth. The various sections in time which the first of Genesis proclaims, and all geologists admit, must have existed for the required new developments of the earth's crusts and conditions of climate, to make new operations in the forms of flora and fauna, either to find the suitable progress and varieties of that binding and loosening of contiguous parts in each species (the electrical increase in the whole), through the feeding capacities so imbued by light, to provide, as the Bible presents it, all the true values of what is called progress with power added in light. But one lesson we may learn (which in the hasty conclusions of savants of late has not been seen), that it demands this point,—That if the vast volumes of the earth's substance had such changes as are admitted to have taken place, so that vast continents, islands, and seas were upreared one after the other, that for such results the earth's entire volume must have been at work, and had all the parts so raised by the internal reduction of the first settled weights greatest, to be lighter, as a whole, than the whole upper volume in hydraulics of all fluids above; which had a way prepared for them to act on and by the centre. This light, by heat, the giver of the vital line of the circulating force, must prepare, if the whole body be made capable of acting toward the entire boil of life, whether for a globe, a man, animal, vegetable, or insect; this is the law to keep up entire bodily circulation, pathologically and anatomically; escapement then continuing into the upper weights however refined as fluids, or vast their mass is required therein to be.

This is a settled law of all true modern savants, so exhaustion must go on with supply sufficient to all the volume of life, to be kept up for equal times and distances in all solid factors of all species alike. Hence, the work of any such class to begin must be first supplied with this upper fluid medium divisor, and so, kept up itself, to prevent rising volumes at its surface, making a crust against internal breathings pure.

Then, as this diffuser of all parts for crusts, bones, veins, and skin, gets to work, its past operations must have a collector over its otherwise naturally diffusive forces, to keep up past acquired parts of each factor, of all the characteristics decided on by *purpose*, in a mind over matter at work, by this strict old law of diffusion, and

incorporated magnetical attraction, for uniting agencies extant, and which wants a new thing, living or dead, to be brought into existence alone thereby.

It must be a breach of common law if nature could take up red earth to make a man, or a tin kettle—above selection and settings by mind anew.

In the narrative so full, and so scientifically teaching the dependence of matter at the use of mind, the giver of the Bible has not only presented this dependence of nature for the wide difference between man and other creatures of his use, in law, by a just progression in the binding forces, electrically engrafted with heat as subtraction for motion against gravitation, addition to receipts, as light initiates them; but it is a kind hint to man that nature was placed at his command to select combining substances, that he for his own pleasure and progress in skill, might find at his hand the means to be a creative inventor of new things for convenience, which the succinct prior statements, that God had to make and set all factors as species of and by such material, and in such surroundings as they were to occupy, until Jehovah was pleased to act over the incorporating forces electrical for a new set of agents, leaving those old and not fit to live in the new state of things, to be buried in the required convulsions for the change, to fossilise, as a memorial of the truths of the history he gave it all through time up to Eden's finality.

Now, let a physician stand over a man dying by poison, and ask where is his assurance in giving his certificate of causes for death, when it occurs, and on what ground can a verdict be presented by the jury thereon, whether by accident or human purpose, could they decide, if natural elements could set up a shop for powers to act for any new order or thing. No man searches on that ground, for powers to find a new species, but only to find out what is already laid into matter. No inventor could expect to succeed except as he studies what is already in natural things given and latent, and then for the same, as required for new combinations to his object. But for this law the anarchists might plead they did not know but that their bombs would turn out harmless. Mind must precede all uses of matter. Nature works no accidents by her *rôle*.

### A PREVIOUS LUNAR OBSERVATION VERIFIED BY A REPETITION.

ABOUT the year 1860 I was walking over the top of Roborough Down, near Tavistock, when, turning to look back at the moon, well up in the heavens, at the full, I caught sight of a remarkable state in the surroundings of her body. This I afterward gave a record of in a little pamphlet, the second part of a work called "Hints from the Dawning; or, The Creation Study Considered under the Laws of Light and Motion."

There was, also, a printed illustration of it.

Through a fire at the publishers, a greater part of this work was burnt at a Mr. Freeman's, Fleet Street, to whom it had been transferred by the first. I have seen it in the racks of the British Museum, however, and still have a copy:

The delineation, by the printed picture, was of the moon with the solar light shining over her surface, within a nearly unclouded, frosty atmosphere. The only obstruction to a perfect face was by two narrow, but very dark clouds, one standing across the upper limb, the other hiding the lower one; both very slightly.

Then, above the higher one arose, distinctly, the aspect of a vast, well-defined, fluid stream, rushing up like steam from a boiler, or dry steam from a locomotive, into the surrounding ether. It was evidently arising from the solar heat passing through the moon's whole body, like as it will from an iron vessel filled with fluids over a fire, by pressure's radiation from the lines of receipt.

Hence the two clouds made a very distinct result, like the kaleidoscope's two black slides do, to throw the reflection by refraction on a fluid refined disc behind again, of this rising substance in ether as the glass. If no such ethereal medium had been there, but only vacuo, it would have had no refracting power to the eye, any more than the toy without the glass receiver. This being seen, proves one was there.

Being alone, late at night, I could have no one to verify my statement, and the peculiar especiality of the arrangement needed for this phenomenon I could scarcely expect to see again. However, others might, so I described it.

The verification has arrived many years after.

I had asked a friend to take, or send me in his trap, to a village where I had, for many years, laboured in the Gospel; but, by infirmity, could not now walk there and back, as before, seven miles off.

My friend preferred to get a little outing and drive me himself, Mr. H. White, spirit merchant, Tavistock.

It was in the fall of 1892.

As we were returning, he suddenly exclaimed :

“What is that coming out of the back of the moon?”

Had he not, as the driver, looked up, probably I should have missed this beautiful sight at its action evidence again. Directly I did so, I saw a repetition, and in a great variety of that, by the previous observation.

The moon was again on the full, about  $20^{\circ}$  above the horizon. There were no clouds touching (or, intercepting rather) any light from any part of her disc ; but higher up, at an angle to her perpendicular, of several degrees westward, two such as before. In each case, the rest of the sky was cloudless near this appearance.

In this latter case we waited long enough to see the rising, gaseous exhalations, at first perpendicularly to the moon's position ; but as we moved onward, and the two clouds in the air also, a little, the fluid exhalations changed their line, to reacting from the eastern limb, until, at last, it poured out from behind the lower extremities, yet always keeping up the apparent breadth of the lunar orb ; when spreading it became lost in the upper ether finally.

The whole thing in both cases was of the solar operations, thrown on the centre, through her, by the face of the moon, which in this last case was never in part obscured as a receiver of his supporting gases of heat and light awakening it. It was a made, visible proof of the statement of the 19th Psalm—the sun's heat through all made.

The succeeding lecture, “The Force of Light,” of 1861, out of print now, which produced some considerable sensation when it was first issued, I herein reproduce it. It remained unanswered then by all the agents of error, in respect of any power Nature has to bring round again her own radiated, fluid gases (expelled to the surface by universal pressure), to give and keep up the degree for meeting universal vitality (if without such food) by matter entirely new from without ; which, to prepare all this earth and glorious heavens above, as we find it, fit for human advantage, must have been in the provision and use of a designing kind hand to accomplish it.

As, close to my eightieth birthday, it is not likely I shall do more to throw light on these subjects, the reprint of this lecture will prove that I, at least, have kept to one consistent system of law, learnt from the hallowed Book of God, and have ever been consistent to experimental proofs as well.

# THE FORCE OF LIGHT.

BY MR. E. DINGLE.

*Reprinted from "Pitman's Popular Lecturer," No. 60, April, 1861.*

[The following lecture, which was recently delivered at Brixham, is by Mr. Edward Dingle, a brother of the Rev. J. Dingle, M.A., incumbent of Lanchester, Durham, whose lecture on the Value of Knowledge, appeared in the February "Lecturer." He is the author of "Hints from the Dawning; or, the Creation Story considered under the laws of Light and Motion," and for which he received the thanks of the Committee of Council on Education. Mr. Dingle gives an outline in this lecture of his reasons for claiming to have discovered that, according to his interpretation of the first chapter of Genesis, the power of Light is the centrifugal force of physical nature.—EDITOR.]

"Where is the way where light dwelleth."—JOB xxxviii. 19.

IN undertaking to present to this meeting, the idea that material Light is that great agent of nature, the hitherto undiscovered centrifugal Force—that great mystery of science which has hitherto puzzled the greatest philosophers of every age—I am aware of the liability I incur of being considered a hasty and presumptuous innovator; but as this has always been the case when other great discoveries were reached by the elastic energy of the human mind, rightly directed, (and the slowness of others to accept a theory is no doubt a useful guard against vain precipitancy) I am still encouraged to persevere. Light of any sort has that power, which, on true lines of conduction, ever engrafts itself on what it labours; and when pure, will form its own veins against all darkness, and inertia, moral, or physical. The knowledge of this is the palm of triumph held by the possessor of a true faith, in whatever he has seen, as well founded in the real, and sustains him against the certain violence of ignorance and prejudice.

Science allows speculation only as an agent of suggestive effort and enquiry for calculation, but never admits without experiment the

proof; and the idea of the illustrious and comprehensive minded Kepler, that some grand law of unique order, wrought in the motions and restraints of the planets, however beautiful and consistent to all the analogies of nature, could only at last be a point in science for a base, when it had been discovered what the proportion is in the relative distances and periodic times of the planets; then it became a certain guide to astronomy, and unimpeachable. Such also in force must be the evidence in my own subject, resting on the demonstrations of science.

It is well known that the riddles of science, as well as all others, have appeared singularly simple when once the proper illustrations have been found; and I have confidence this evening, to make our subject just as clear to your minds, as, after discovery, gravitation was made by Sir Isaac Newton, by the truth that an apple all around this globe would fall towards the centre.

It is a remarkable fact, that while all philosophers have recognised there can be but one great physical agent of motion used by the Creator to overcome inertia, and the draught of gravitation downward when false elevation had been obtained—and all would laugh at the idea of more than one centrifugal force—yet in their published theories for elucidating the difficulties of natural phenomena, they had three, quite unconnected and independent of each other; except as having the anomalous work of labouring for unity and beauty in the same bodies and universe. Thus the commonest laws of mechanics were trampled on.

One was a vast central pool of fire in the earth's body, as the cause of volcanic eruption. Certainly no trifling power. This was supposed to feed alone, and be regulated in the earth's own belly, under the chemical action of what is called latent heat. That is, material, capable in forced conjunction to produce heat. But how the material was forced together, and how kept from violent and rapid decrease of power, so as to leave the earth's corporate heat in such a state that night semi-diametric radiation should be not an increasing winter all over the world, no account could be given.

The second was one at work on globes, if work that could be called which was supposed to exist in a power once given, without an agent of support continued.

This force was a projectile impulse given at the first creation of the planets, and incapable of decrease. The swiftness around the sun, notwithstanding the immense difference in the diurnal and annual flights, was supposed to be equal to ignore his entire force of gravitation, except as to form an ellipse in the annual flight, although it was



known the measure of his increase of draft was in the exact ratio of the apohelion approach. What the earth was to do with such a vast drag as the moon hanging on the skirts of her garment, no idea appeared to exist, or was even suggested as necessary.

The last, which at least must have a place, was that morning and evening, summer and winter agency, which regulates so beautifully our surface series of activities in organic and inorganic life—light. And as there can be but one, it certainly will be found difficult for moderns, any more easily than the ancients, to steal without detection the magnificent horses of the sun, and harness the glories of the waters of heaven, to any other agent whatever. But we should rather say, with truer teaching in Biblical and experimental science, the splendid powers of the continual Divine providings of the Almighty of light, as the sun or fixed stars are vast heavy bodies, dependent for motion on that law of all mechanics, a thread line from without. My effort and time being only capable to-night of proving this fact, that all globes must be moved by a material agent from another centre as its commanding resource, I must avoid an immense field of beautiful scientific fact I have become acquainted with, by studying science with the aid of the Mosaic synoptical key, and be satisfied with settling this great fundamental truth.

You will observe in the Mosaic account of the creation, that while the earth's first nucleus state is spoken\* of as a deep or large volume, it is also spoken of as waters, or plural, in its elementary first features as projected in space. But light, which in the second day's account is also spoken of as waters of heaven, or plural, is only spoken of in the singular number in the first day. Thus we have a hint, in the Divine synopsis, that in the main feature—function of light—we shall find a key to its unique force, as removing the inertia of the globe, as well as giving the necessary form; and that, as our philosophers have largely discovered, it is its function, in the plural of its energies, to work out all the vast range of interior and surface motions and varieties. So of the globes as entities. Thus what a splendid destiny belongs to the work and studies of material light. What a typical key to the laws of power in all truth, moral and spiritual, as the light proceeding from the throne of Jehovah.

The most striking peculiarity of light is that property we call heat; and, if we search the operation of this property, we shall find all the evidence we require, as to where the centrifugal force is to be proved seated.

\* Under more full acquaintance with the subject, I should now say "The Deep" meant simply the centre of gravity.—E. D., 1894.

It is certain that heat always effects motion, although the quantity to make it visible to the eye is greater or less, according to the fixity or cohesive powers of the body acted on. No fluid can get into another without changing the relations of gravitation ; and when it has power to force its way independent of a cavity, it must burst and move the parts of its opponent.

It is certain also that, when heat is withdrawn, the hard hand of central magnetic attraction forces everything again ; and if the flow of heat is not continued, inertia, or stillness, returns, after the embodied parts have taken their relative positions, in all which gravitation struggles to settle. So that water, air, animals, vegetables, and the most volatile gases, as well as volcanic masses, all cease to move when heat is withdrawn, and recover energy at its restoration. You observe this tea urn, with its iron for the convenient purpose of preserving heat when it is absent from the fire. Properly studied, it is all the illustration we require to prove that all individual globules, whether a star or an insect, are dependent on external supply for the maintenance of heat, and consequently, their vital belt of motive agency. It is our apple to decipher the centrifugal force or rise agent of natural physics.

Why is it used in the urn at all ? but because the heat cannot be kept in it to boiling power after the urn is taken from the fire. But it is certain, even thus, the law of dependence to maintain force is not altered ; as the moment the whole apparatus is removed from its sun (the fire) decline begins, by the infallible flow of all fluids to their place around their centre, according to their weight, and thus the expanded water will constantly strive to contract and squeeze out, or drive off, the light caloric, and either the iron must be taken out to be heated again, or the urn placed over the fire.

Thus caloric we find can never retain a place of central energy in a globe, without its supply be kept up from without, and that it flies out with a measure of rapidity, according to the measure and weight of other fluids pressing by the law of specific gravity. With what rapidity then must the supply be continued to this whole globe, to resist the united weight of all its other sources of physical pressure on the centre ? What a weight is our whole atmosphere and ocean waters together, besides all other contracting agents attached.

Suppose this urn was suddenly to grow to the size of a steam-engine, working the thread lines of the most complicated machinery, the law must be the same, only requiring a law of attention to the equilibrium flow of heat, in proportion to the multitude of energies put forth. If the urn grew as large as this town, and had all its

works to support, your collier vessels constantly cruising, tell the tale that the law is the same ; measures attained, and resources of heat will exhaust, and more must be got from afar. And thus we learn that this earth, with all its minute powers or magnificent energies, is dependent on external means to maintain heat and motion ; and as it is well known that heat always flies in one body to an equilibrium ; all the volume (although, as in the heart, veins, and flesh of a man, it may be differently conducted) must be associated in one volume within, and a means of support from without. Now it is certain the earth cannot send ships or balloons to other planets, or the sun for her means of heat ; and yet the day is hot, and the night is cold, the summer productive, and the winter is inert again, with general regularity, and no grand universal cooling down is going on, although various local variations take place in years and seasons. The general equilibrium of power is happily supported. Her only exterior resource is light, which, while her whole weight is pressing the sun's stream, by the immense force of her magnetic draft, is rushing into her bosom at least with the velocity of 192,000 miles a second. And as the law of bodies is proved, by the moon's influence on our tides, to be one of capability to draw, by attraction from without on the surface of the superior, and to raise fluids off the master's face ; this earth must be (as a boy sucking a tube makes a vacuum, and raises caloric first, and other fluids according to power in him and the under holder) drawing heat from the sun. Thus she is a large vessel, over her central sun or fire, receiving her supplies as the unique pressure of gravitation demands, just as when a kettle is over the fire, the cutting power given to light, as a peculiar property, enables it to enter and move all the contents. But it will never get above boiling power of motion, because the power of each part or liquid can only retain according to its given class by gravitation, and receive by its sympathy with light, and therefore after that point must give up or radiate as fast as it receives, thus regulating motions or times and seasons.

The property of heat, or burning or cutting, called actinism, which light has, secures, that so long as the stream is continued, the boiling power will be attained, as the resistance of the body acted upon will continue, up to that point. Thus circular motion is secured to all bodies in their proper positions in light. Up to that point, light must have the power to incorporate its own nature in the contents and parts of the vessel, and thus a law of growth is provided.

The refraction of light on entering the atmosphere, and its proportionate increase of resistance, as seen in water, is evidence of its subjection to the common laws of density and gravitation ; while the

entire pressure of the earth on its stream, secures it must find its way through the whole system, and whirl the earth round on her axis, by the force of all her fluids, acting on her settled motion, directed by one law of diurnal impulse, and to that line of radiation give a sure preponderance in the veins of all the system. This law of infallible pressure of all parts to the centre, involves also an impossibility that any explosive agents or fretting crusts of sulphurs or oxides could support the earth's interior heat; and if the interior subsided, the exterior must feel the effect in proportion. Thus when any explosion or increase of gas is evolved in a body, the violent eruption resulting is a proof that it can only disturb the equilibrium for a moment; as the rapidity of its action is caused by the infallible regulator—gravitation pressure on the centre—discharging the delinquent in a velocity proportionate to its own measure. And latent sources of heat in the earth are as dependent on the vital thread of respiration from without, to produce motion, as the fat of an ox or a man is for use in vitality. Stop the draft through of any body and motion power is lost.

Thus we find the Divine wisdom of our Creator was in the first passages of His word, to tell us whence matter came, and how, after He had made it, He worked it. In telling us of the creation of light, His object was to inform us of His created and constantly sustained agent of motion in natural physics, that as children in His school, we might have all the keys we require to read the whole volume. As by His aid we have found it out, to Him be all the glory.

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