KEY

TO THE

Hebrew-Egyptian Mystery

IN

THE SOURCE OF MEASURES

ORIGINATING

THE BRITISH INCH AND THE ANCIENT CUBIT

BY WHICH WAS BUILT THE GREAT PYRAMID OF EGYPT AND THE
TEMPLE OF SOLOMON; AND THROUGH THE POSSESSION AND
USE OF WHICH, MAN, ASSUMING TO REALIZE THE CRE-
ATIVE LAW OF THE DEITY, SET IT FORTH IN A MYS-
TERY, AMONG THE HEBREWS CALLED KABBALA

BY

J. RALSTON SKINNER

יהוה

"OPEN THOU MINE EYES, THAT I MAY BEHOLD WONDROUS THINGS
OUT OF THY LAW!

"MY SON, IF THINE HEART BE WISE, MY HEART SHALL REJOICE,
EVEN MINE:

"YEA, MY REINS SHALL REJOICE, WHEN THY LIPS SPEAK RIGHT
THINGS."

"BEHOLD! THE DAY OF THE LORD COMETH, AND IT SHALL COME
TO PASS IN THAT DAY,

"THAT THE LIGHT SHALL NOT BE CLEAR, NOR DARK, BUT IT
SHALL BE ONE DAY,

"AND THE LORD SHALL BE KING OVER ALL THE EARTH: IN THAT
DAY THERE SHALL BE

ONE JEHOVAH,

AND HIS NAME SHALL BE

One."

ישמחו השמים ותגל הארץ

The Lord will   Provide a Way

לבי   לביא

יהוה יראה
ז

TABLE OF CONTENTS.

Introduction.

Contents an essay or study rather than, strictly speaking, a work. The whole a series of developments based upon the use of geometrical elements, giving expression in numerical values, founded on integral values of the circle, rediscovered by the late John A. Parker, and by Peter Metius in the 16th century. Brief statement of these developments; the greatest being that the system from whence their derivation was anciently considered to be one resting in *nature*, or God, as the *basis*, or *law*, of the exertion, practically, of creative design : as such to be found as underlaying the *Biblical structure*. This introduction contains the Hebrew alphabet, with the values and powers of the letters, and some of their supposed symbols, with some remarks on the hieroglyphic use of the letters. (The proof of the uses of these values by the ancients is all that is claimed as being of use connected with the quadrature idea, so that the usual offensiveness connected with any stated idea of quadrating the circle is not involved.)

Quadrature of the Circle by John A. Parker.

It would be amply sufficient for the purposes of this work to give the numerical results (notating geometrical conditions) of Mr. Parker's quadrature; but it is thought that the uses shown to have been anciently made will naturally lead to a desire to examine into the very means whereby these numerical data are obtainable. To satisfy such a desire the leading outlines of Mr. Parker's work on *the quadrature*, and of his *problem of three revolving bodies*, with his uses of his results, are given, even pretty fully, by permission. His extremely interesting work is to be had in the city of New York, of John Wiley & Son.

§ 1. Kabbala a species of symbolic writing. Relation of diameter to circumference of a circle a supreme one as connected with the god-names *Elohim* and *Jehovah*. Two expressions of circumference to diameter, *in*

integrals, used in the Bible; that of Mr. Parker, *the perfect* one, and
that of Peter Metius (16th century), *the imperfect* one. One relation be-
tween the two expressions to be found in ¿82 (*b.*). (¿2. Notice of *the
quadrature* by Peter Metius, about A. D. 1585.) Outline of 12 propositions
from Mr. Parker's *Quadrature*, resulting in the *key* numbers, and values,
on which this entire work depends. (See *Prop. XII*, p. 20.) ¿3. *Quad-
rature* by Peter Metius, with statement of curious relations between the
Parker and Metius forms.

Reflections on the Quadrature by Mr. Parker.

¿4. *Quadratare* by Mr. Parker of great value, but set forth not on ac-
count of intrinsic exactitude, but because : (1.) It affords the measures for
building the *great pyramid;* (2.) The *sacred cubit* was derived from it;
(3.) It gives *the kabbalistic* value for understanding the *god-names* in the
Bible, and for understanding the *esoteric teachings* in *the mysteries;* (5.)
It appears at the foundation of the *British measures*. Its great value is,
then, that it is a *literary key* to the comprehension of *ancient learning;*
and, in this aspect, its mathematical or geometrical value is, *however im-
perfect*, one that is of secondary consideration in this work. With this
statement it is to be noted, ¿5, that Mr. Parker's quadrature values are
obtained *by area computations;* ¿6, that there are curious features observ-
able in the details of the Playfair *method;* ¿8, that mathematics is famil-
iar with definitions which are untrue; and, ¿9, that *nature* seems to afford
confirmatory evidence that Mr. Parker is right.

Problem of Three Revolving Bodies by Mr. Parker.

¿11. This grows out of his *quadrature*, as a practical use of his re-
sults, for astronomical purposes, his postulate being, " *The proposition is
therefore demonstrated that three gravitating bodies of equal magnitude,
revolving together, their relative motion shall be as four to three, or one
and one-third of one primary circumference.*" ¿12, ¿13. Illustration of
use of this problem to obtain astronomical time, showing that *nature* rec-
ognizes the use of the Parker numerical forms. ¿14. Table of astronomi-
cal time periods worked out by Mr. Parker. ¿15. The setting forth of
the problems and claims of Mr. Parker is not in any way as affirming the
establishment of the "*Quadrature*," or of the "*Problem of three re-
volving bodies;*" but as necessary, because, without the use of his con-
clusions, it will *forever* prove impossible to reconstruct *the pyramid* agree-
ably with the intent of its architect.

The Possibility on Mr. Parker's Forms of Raising a Co-ordinating Unit of Measure.

The Ansated Cross of the Egyptians, and the Christian Cross, the Emblematic Display of the Origin of Measures.

Primordial Vestiges of these Symbols.

builder," pyramid showing the use of the value 318, or diameter to a circumference of *one*, as a civil calendar number. Old bronze axes of the Phenicians identical in shape with the copper ones of the mound-builders.

British System of Long and Land Measures, inclusive of an Occult System of Time Measures.

§§ 25, 26, 27, and 28, introductory to this inquiry. *Note* to § 33. *Jehovah is Noah*, in the Hebrew, by literal transfer into British is the word I-nch (see also *note*, page 160.) : Also, *note* page 65, as to Jared, the father of Enoch, being the *Mount of Descent*. Jared literally is YRD, or the British word *yard*, a *measure;* and as *source of descent* is the British word *yard*, used in the sense of *membrum virile*. (Let it be noted that the British part of the language is, one may say, almost purely Hebrew, as is fully within the experience of students.) Hebrew language noted for its *stem-building*. The words *Jared*, *Ararat*, *Arets*, *earth*, *arour*, cursing, cognate forms under the idea of *from a source*, as *birth*, or *origin*. See, also, in this connection, Introduction to Appendices (*c.*), as to an extension of the same cognate form in *Mars*, as *Generator* or the *germinating principle*. § 34. God-names Elohim and Jehovah numerical indices of geometrical relations. God-name *Elohim*, in its radicals, expressive, also, of the *differential* values 31 and 36. A use shown of these differentials. § 35. A table showing a linking together of values of apparently incongruous subjects matter. (2.) Lunar year of ancients $355 - 1 = 354$ days. Time scale of measures, year values, of 355, 360, 365, and 354, 359, and 364 days. (3.) Relation of 6561 : 20612 to 113 : 355.0001+; and 113 : 355.0001+ to 36 : 113.0973+, where, by a slight change 113 becomes a circumference to a diameter of $\overline{6 \times 6} = 36$.

Introduction to Construction of Great Pyramid.

§ 38. Measures by Professor Piazzi Smyth, taken on the *British standard* at Edinburgh. He found the measures of Colonel Howard Vyse, of the French *savants*, and of Professor Greaves, of Oxford, reliable. § 39. (*d.*) Measures of passage-ways, and chambers, showing variations on a *mean* of measure.

Standard Measures of the Pyramid.

§ 40. One object of construction may be taken as *astronomical*, because *north base side* coincides with *parallel* of 30° N. latitude. (*b.*) Another may be taken as *geometrical*. Measures of the mass by Professor Smyth. § 41. *Standard measures* shown in use of Parker forms. Compari-

of floor line of ascending passage-way, with the roof line of descending passage-way. Floor line of ascending passage-way, with relation to the base of the pyramid, to the levels of the queen's and king's chamber, and to the vertical axial line of the mass. ⸹ 74. Abstract geometrical elements laying at the base of the *interior construction* of the pyramid. ⸹ 75. Length of king's chamber level. § 76. Elements of dimensions of queen's chamber. ⸹ 77. Height from floor of subterranean passage-way to the gable roof of Campbell's chamber. ⸹ 79. Height of level of passage to queen's chamber above the center of the sphere, in which the whole pyramid is supposed to have been placed. ⸹ 80. A method of placing a salient height line for the interior construction of the pyramid. ⸹ 81. Close of effort at reconstruction of the pyramid, with remarks. John A. Parker's method of quadrature and his problem of three revolving bodies thought to be the *base of the Pythagorean and Egyptian systems of geometry and astronomy.* ⸹ 82. Pyramid symbolization; having a Hebraic and Biblical application to set forth a *primal one* under a *Jehovah* and *Noah* form. *Jah is Noah*, or *Jehovah is Noah*, in Hebrew would be נן', or literally, in English, Inch.

The Temple of Solomon.

⸹ 84. Introductory remarks. Details of description. Remarks on the word *cherubim.* Comparison of the measures of the temple with those of the pyramid. Kabbalistic elucidations with regard to astronomical features of the temple.

Introduction to Appendices.

⸹ 85. (*a.*) The opening sentence in Genesis. (*b.*) Its parallel numerical reading. *Elohim* a circumference value of 3.1415 to a diameter of 1. (*c.*) *Arets, earth, Adam, man,* and *H-Adam-h, earth,* are cognate with each other, have a like signification, and are *personified* under one form, as the Egyptian and Hebrew *Mars.* (*d.*) Enigmatical constructions appearing in the first face-readings of the Bible narratives. Illustrations and examples given.

Appendix I.

⸹ 86. The Garden of Eden an *Adam,* or 144 form. ⸹ 87. The production of the woman from *the side* of the *man,* or the number value 5315 from 113. The *rib* a determinative of the method. (*c.*) (1.) The woman form of the garden the source of the Holy of Holies, by type, and of the four typical rivers. (2.) Object of the glyph to display the Parker and Metius number forms of 20612 : 6561 and 355 : 113. (*d.*) Other deter-

minatives. § 88. The Garden of Eden as the 7th day. (The Hebrew words: *sacr*, as *membrum virile*, the base of the Latin *sacr* with *facio*, and also of the English *sacr*-ifice and *sacr*-ament; and *sanctified*, or the Hebrew *Kodesh*, as showing a sexual or productive use.) Garden of Eden display in the Eleusinian *mysteries* by women, in the use of the *basket* and *serpent*. Curious learning as to this. *Note:* Mystery of the cross but deepens, as one gathers knowledge as to it.

Appendix II.

§ 89. *Time* calculations founded on *Abram, Melchizedec, Hebron*, or Kirjath-Arba, *Joshua the son of Nun*, and *Caleb the son of Jephunneh*, as connected with the narratives relating to these personages. (*Abram* is *Abra* with an appended *m* final, and *Abra* read backward is *Arba*, the city in which Abram lived.) § 90. Abraham and Isaac to be taken together as a year circle value of 355, which is the Hebrew word *shanah*, or *year*. Curious learning. Time year values as 355, 360, 365.

Appendix III.

§ 91. The word *Logos*, or *Word*, connecting with *John*, or *Jonah*, or *Dove*, with *Jehovah*, and with *Jes-us*, through *the fish*. *John* the same with *Jonah*. The word *beginning*. *John* and *Jonah* as *Dove*. The *fish* as connected with *Dove*, or *John*, or *Jonah*, to make *Jehovah*. (*f.*) The *Te Deum* and the birth of the Savior. (*g.*) The *Dove* used in calculations of the year. (*h.*) New Testament use. *Note*, as to the river *Jordan* and its *fisheries*.

Appendix IV.

A method of construction of the *Julian Calendar* from the different *year* values of the ancients. § 92. Garden of Eden one of the *birth of time*, and of *man*. Year values, 355, 360, 365; from these another scale of 354, 359, and 364, of which the last value, 364, arises from the *woman number* 7, and connects this as a woman number with 355, which is an abstract circumference to a diameter of 113, or *man* value. Page 229: Pictured use variously displayed; Hindu display clearly marking the Hebrew use; it is that of the woman hermaphrodite Indranee-Indra, the *nature goddess*, the Issa of the Hebrews, and the Isis of the Egyptians. Page 230: "*Remission of sins*," having reference to a "*new birth* unto righteousness," explainable under the type of shedding of blood in conception. Page 232: *Julian Calendar Division*. § 92. (*b.*) The possible *heel* meaning of the 217 days. Name of Jacob the same as *Jah is heel*.

Appendix V.

The Flood and the Ark of Noah, with their Strange Kabbalistic Biblical Relations.

the Adamic Chronology. Page 251 : Astronomical personification. Ararat same as the Roman *Janus Bifrons* and *St. Peter.* Page 252 : Peter same as cube of 5 under the name of the *stone.* (There is a curious reflection here. Matthew 16, v. 18, says : "Thou art Peter (rock or stone), and on this stone I will build *my church.*" The only other place in the gospels where the word *church* is used is in chap. 18, v. 15, *et seq.*, where there is commandment for the settlement of trespasses by *the church. In both these places* the power of binding and loosing is given, showing a direct connection. Contrast this with chap. 5, v. 23, *et seq.*, where there is command for reconciliation with the brother before bringing the gift *to the altar.* Now, it is most strange : the word for *church* is *ecclésia*, which is a term *of separation,* or of *the comers out from,* and could have had no existence until not only after the death of Jesus, but until the destruction of the *altar and temple ;* for so long as there was an *altar and temple,* just so long the Jews, by the *commands of Jesus, were to obey the law.* Has there been interpolation here? or were these sentences used prophet- ically?) Page 253 : Other types and teachings. Page 254 : Curious, but illustrative, opinions of the church as to women. Page 255 : The twofold character of the *Messiah,* and its paralleled Hebrew and Greek mode of origin. Page 258 : The Méshiac condition connected with the geograph- ical location of the head-waters of the Jordan river. Page 259 : Curious learning as to the salient dates of Biblical occurrences agreeing with as- tronomical time marks. Page 260 : Remark as to the "Life of Apollonius of Tyana, by Philostratus," and its connection with the life of the Savior. Page 261 : Other Méshiac types and shadows. Accounts for the conver- sion (which word means *turning as on a hinge*) of St. Paul. Why he was Saul and Paul. Page 262 : Saul and David. (Note that while Saul was son of *Kish,* in Hebrew 113, so David was son of Jesse, or ישי, and this word placed in a circle reads 113.) Page 263 : Acrostic uses in the Bible ; IHS, and Shem, Ham, and Japhet. Roman badge.

Appendix VI.

§ 94. Grand determinative at the close of the flood, going to show that the *confusion of lip* did not necessarily imply confusion of *knowledge.* An evidence of common possession of this *knowledge.* § 95. The con- struction of the Tabernacle as a dwelling of Jehovah. Page 271 : Number value of name of Moses is 345; that of Jehovah, in His assumed name of *I am that I am,* is the reverse of this, or 543.

Appendix VII.

Conclusion of Appendices.

dences of the modern existence of this knowledge. Templar emblem of the *old man*. (The five-rayed star, or pentapla, as signifying a pyramid.) The Genius of Free Masonry, and detailed description of its meaning. Page 314: The province of *ritualism.* Page 315: *Ritualistic* symbols. (*a.*) The *T'phillin ;* (*b.*) The *cross* and *rosary.* Page 318: Conclusions by the author. A discovery by the author, made as these last sheets are in the hands of the printer, is too important to be omitted, and must find a place here. It has a bearing upon the whole work, both as to Mr. Parker's claims, as supporting them, and also as to the Biblical containment of his forms, as the *perfect*, or *Divine*, ones. Mr. Parker's work goes to the extent of showing *an integral relation of area of a square to that of its inscribed circle, and of diameter to circumference of a circle by use of a basic number form as seen.* Now, if from the same basic number the harmony extends to the development of *an integral relation between the cube solid, and the solid contents of its inclosed sphere*, this, *by harmony*, is in very nature almost conclusive of the *natural* or Divine nature of the origin of the Parker forms. Let the *difference* between Mr. Parker's relation of diameter of *one* to circumference, and the accepted one be first stated : The accepted one is $1 : 3.141592+$, while that of Mr. Parker, being $6561 : 20612$, is $1 : 3.1415942691+$. For singularity of relations connecting Biblical numbers referred to in the text with geometrical changes of forms, by means of the Parker quadrature elements, take the following :

The running values of the letters of the Hebrew word *man* (אֶישׁ) are 113; the full values, added, are 311 ; and so, also, the full value of the Hebrew words *the woman* (הָאִשָּׁה), added, are 311 : so that 311 is both *man* and *the woman*, while 113 is *man.* The form stands 311—113, which reads the same *either way.* But the term *man* as *aish* is a form of *Adam*, and *Adam* is 144 ; and on the four cross lines of the square, from verge to center, the values read, or are taken as 144—441, or the reverse (and taking the square thus divided as the squared Zodiac, while one 441 is the Hebrew *dami* (441), or the vertical line as the *sun overhead*, or solstice line to the center of the square, another 441 is the *dami* (441), as the *bloods* of Abel shed, and is the line of the ecliptic, or equinox, from the autumnal edge to the center of the square.) But thus we have two forms— viz., (1.) 311—113, and (2.) 441—144; linking themselves together. But from the *man* form 113, *the woman* was taken as 5315, and there resulted the form 5315—5135 ; and by dropping the two fives in the center of the square, we had remaining the form 531—135, or *woman* as 135, and its reverse 531 : whence were derived the *Metius* and *Parker forms*, showing

one object of the use. Thus there are three forms all connected together under the names *man, the woman, Adam,* and *woman,* and they can be placed as—

$$311—113$$
$$441—144$$
$$531—135$$

It is said of *the woman* that she was taken from *Adam,* and afterward that the Lord God brought her to the *Adam,* showing some use of *woman* with *Adam ;* so take the above form of *woman,* or 135, and *Adam,* or 144, together,

as $135—144$

or reversed, as $531—441$;

which last form, reversed, is *Adam* joined to *woman,* or the *hermaphrodite* form. But take it that there is a significant meaning to the form 531441 *(as thus obscured),* as disclosing a *development of the Parker Quadrature* forms, thus :

Take the Parker forms, or—

(1.) *Area* of square,	6561.
Of which the side of square is,	81.
(2.) *Area* of its inscribed circle,	5153.
Of which the diameter is,	81.

Then changing *area* to *rectification,* or *line,* measure :

(3.) Diameter being	6561.
Circumference is $5153 \times 4 =$	20612.

And now there develops *from area and line, to cubic* measure, by a wonderful and harmonic sequence, as follows :

(4.) The square of 81 to the side in (1.) cubed is

$$6561 \times 81 = 531441$$

or the connected form of woman Adam ; and now (as discovered by the author March 10, 1875),

(5.) The *solid* contents of a sphere is to be had by the form $\frac{1}{6} \pi \, \text{Dia.}^3$

(see any geometry); which for a diameter of 81 as in (1.) is $81^3 \times (3.1415942691 \div 6 =) .5236990448+$; and, as a fact, *this is precisely the same as* 20612 [rectification of circumference in (3.)] $\times$ 135. So that while the *area* in (1.) changed into a cube is 81^3, or 531441, the solidity of the contained sphere is 20612 $\times$ 13.5 = 278262, showing a *continued integral relation ;* where the solidity of the sphere is the Parker circumference multiplied by 135, or by *woman,* and where the solidity of the containing cube is expressed by the reversed form of *woman-Adam,* or 531441.

By this a leading is shown to closing up these curious relations, wonderful as eventuating in *integrals :*

(1.) Relation of *area* of square to that of inscribed circle.

(2.) From this is derived *linear* relation of diameter to circumference of a circle.

(3.) And, then, from (2.) the value of *linear circumference* multiplied by *woman*, or 135, gives the *solidity of the sphere inclosed in the cube of one of the bases of which* (1.) *is the area ;* the cubic contents of which cube is 81^3 or 531441, or reversed, 144—135, or a use of the joined values *of Adam and woman.*

This shows that there is *in nature* not only an *integral* relation between the value of the area of the circle inscribed in the square to the area of that square, and between the linear diameter to circumference of a circle, arising from the same numerical forms, as stated by Mr. Parker, but that on the *same* numerical basis it is to be shown that the integral relation of the *cube* to its contained *sphere* is 531—441 to 20612 $\times$ 13.5 = 278—262 : and this harmony, with such multitudes of others as have been shown, only goes to confirm the fact that the Parker relations are the *true natural ones from eternity to eternity :* and are the ones on which the Bible is built.

To complete the integral relations. The *surface* of the cube of 81 to the edge is one face = 6561 $\times$ 6 = 39366. *Surface* of contained sphere = π Dia.^{2} = 3.1415942691 $\times$ 6561 = 20612.

The following and closing relation, discovered March 17, 1875, is too important to omit, as it has a bearing upon the foundations of the *quadrature.*

Standard circumference of base of pyramid has been shown to arise from integral relation of diameter of 6561 to circumference of 20612 ; where 20612 is multiplied by $\frac{4^2}{3^2}$, and this as inches, divided by 12 = 381.7037 feet, the half base side of the pyramid (§ 41). Actual circumference of base of pyramid, enlarged on this, is where the relation is taken of circumference of *one* to a diameter of .3183097+, which diameter multiplied by 12 = 3.8197166+, and by 100 = 381.97166+, gives a variation on 381.-7037+. The circumference of 20612 on which these relations are raised, is founded by Mr. Parker on the *area* of 5153 of the circle inscribed in a square of an *area* of 6561, the side of which square is 81.

Now, to show that these very *elements of circular relation* are natural, and actually have connection with the *elements of the square* :

(1.) The *mean* proportional between 381.7037+ and 381.97166+ is 381.83766+.

(2.) The *diagonal* of a *square* whose side is 81, is 114.551298+, and this divided by $\frac{3}{10}$ = 381.83766+, or this very mean proportional between these circular elements : and this shows that *the elements of the square do of themselves by nature contain relations to the elements of the circle ;* which, again, proves that Mr. Parker's results are well taken according to nature, and are consequently right.

The value 1145.51298 ÷ 5 = 229.10+, is a reduction of this connection between circular and square elements, and the author believes (from memory) that 229.10+ is marked, in inches, as a measure of antechamber passage in the pyramid, by Professor Smyth.

The mean proportional 381.837+ is the square root of 1458, or 486 × 3.

March 22, 1875.

THE SOURCE OF MEASURES.

INTRODUCTION.

THE following, in place of a work, strictly speaking, is rather an essay or study. It is like the study of an artist, where it comprehends many details in outline going to make up a whole, yet unfinished and subject to change, here and there, as the blending of details may prove inharmonious or incongruous to the general scope of the design. Unlike such a study, however, others can join in the labor of completing the task; and it is hoped that it may prove an incentive to that end.

The whole constitutes a series of developments, based upon the use of geometrical elements, giving expression in a numerical value. These elements are found in the work of the late John A. Parker, of the city of New York, setting forth *his* discovery (but, in fact, the rediscovery) of *a* quadrature value of the circle. Upon this one, that of Peter Metius, of the sixteenth century, seems to be a variation.

Mr. Parker makes use of an element of measure of the equilateral triangle, by which, as a *least unit* of measure, to express tho measure of the elements of a circle in terms of the numerical value of a square: so that, as a conclusion, a square of 81 to the side, or 6561 in area, shall contain a circle whose area equals 5153; or, rectifying the circumference, a diameter of 6561 shall have a circumference of $5153 \times 4 = 20612$.

Let it be understood that the question of value of the quadra-
ture, whether by Mr. Parker, or by Metius, as to whether it is
the expression of exactitude of relation, does not arise ; nor is it,
save incidentally, pertinent to the subject-matter in hand. While
this work thus is relieved of any necessity of examination into
the question of the possibility of what is called "*the quadra-
ture*," or "*the squaring of the circle*," nevertheless, it is neces-
sary to a proper understanding of the whole that some, to many
persons very dry, details of Mr. Parker's construction of his
quadrature should be set forth in the very commencement. In-
cidentally, however, it is thought that the matters established
herein, as having a direct relation to the *holy things of God, as
laid down in Scripture*, will force an inquiry, on the part of de-
vout people, into the abstract question of "*the quadrature*,"
both as received and as set forth by Parker and by Metius ; and
also into the question of any special value of the quadrature by
Parker, as related to the generally accepted one.

One development is as follows : The numerical value,
20612, of a circumference is made use of to derive from it
a *unit of measure* for *linear, superficial,* and *solid* meas-
ure. Thus, as a common unit of measure is the edge of
one of the faces of a cube, and as there are twelve edges
to the cube, the division of 20612 by 12 is the distribution
of this value onto these 12 edges ; so that the quotient,
which is 1717.66+, is that unit of measure, which is, how-
ever it may be used, convertible into circular, and again,
back into the geometrical elements whence derived. And
this is obtained by the special numerical value, 171766+,
the one-twelfth of 20612, whether, as a fact, it be used as a
whole or as a part, as 1.71766+. Now, as a fact, 1.71766+
of the *British foot* is the ancient *cubit value;* hence, the
whole scheme thus far displayed has been practically util-
ized, inasmuch as 20612 is thus seen to be of the value of
British inches, while its derivative of 171766+, so divided
or scaled as to represent 1.71766+, is the ancient cubit.

This is confirmed from the fact of restoration, by means
of these numerical values, of the great pyramid of Egypt,
in terms of the British measures thereof made of late years.

Another development is that, by a variation on the use
of these numerical values, taken systematically, not empiri-

cally, a diameter value to a circumference value of 6 is found, which is discovered to be the basis of the Hindu method for the calculation of tables of *sines* and *cosines*, *tangents* and *cotangents*, and of the *orbits* of planetary bodies ; which variation, as an enlargement of the above values, on application, is found to give the exactitude of the pyramid measures, agreeably to the design of the architect, thus again coupling a modern with an ancient use.

Another development is that the British system of *long* and *land* measures is discovered to contain an occult or obscure system of *time* calculations, based on the factor 6, by which it is seen that the entirety of the British measures rests upon these anciently developed elements, and thus is, in fact, but a phase of the Hindu system. The factor 6 is the base of the *acre* and *mile* measure, running up from the *inch* and *foot*, and the equivalent of the base side of the pyramid (which is a diameter value to a circumference of 24) is the side of a square, divided into four equal parts of $\overline{6 \times 6}$ each, in terms of the British foot, and necessarily the inch ; hence the advanced measures, as far as the mile, are thus involved. But while this is so, the means of obtaining this pyramid measure is through use of the Parker elements ; hence the Parker elements are thus connected with the whole range of British measures.

But the greatest development is that the entire system seems to have been anciently regarded as one resting in nature, and one which was adopted by nature, or God, as the *basis* or *law* of the exertion practically of creative power—i. e., it was the *creative design*, of which creation was practically the application. This seems to be established by the fact that, under the system set forth, measures of *planetary times* serve co-ordinately as measures of the *size* of planets, and of the peculiarity of their shapes— i. e., in the extension of their equatorial and polar diameters, in terms of the British measures, or the cubit measures arising, as stated, from the forms of Mr. Parker.

The true study of the Deity by man being in the observa-

tion of His works, the discovery of a fundamental *creative law* (in numbers and measures), as regards His works, of as wide and comprehensive grasp as shown, would locate the substance of such a discovery as the practical real tangible link between God and man, as that by which man can in a measure realize the actually existing working qualities of God, just, speaking most reverentially, as he would those of a fellow-man—as, say, of a mason, or of a carpenter; thus revealing tangible existence, likeness, relationship, and, remotely, companionship. Such a link, once found, would constitute a base for superstructures of recognition, praise, worship, and copy. As a fact, this system seems to underlie the whole Biblical structure, as a foundation for its *ritualism*, and for its display of the works of the Deity in the way of *architecture*, by use of the sacred unit of measure in the Garden of Eden, the Ark of Noah, the Tabernacle, and the Temple of Solomon.

Such seem to be the characteristics of development from the elements of quadrature of the late Mr. Parker. The extent to which the development is made so as to compel a mental assent, must be tested, of course, through the contents of the work. There is no disposition on the part of the author to make any assertion as to the strength of his work. What he has done has been done to the best of his ability, and he believes that a studiously careful reading of the work done, will be that, and alone that, upon which any fair criticism can be based.

Since, after all, all matters of science subordinate themselves to any one by which man can arrive to a realizable knowledge of God, all things in this book are of poor value in every other regard, comparatively, save as they lead up just to this kind or condition of knowledge. Such being the case, the following statements may be made as *introductory:*

(1.) The "*Quadrature of the Circle*," by John A. Parker, sets forth the integral relation of diameter to circumference of a circle as 6561 to 20612, derived from area computations, viz: area of square being 6561, area of in-

scribed circle is 5153; and diameter being 6561, rectification of circumference is $5153 \times 4 = 20612$.

(2.) It appears that nature was regarded as making use of this numerical relation, as a law or application of numbers to measures, by which to construct the mechanical properties of the universe; so regulating the times of the planets that they should move by a numerical system such that by it the measure of their shapes was to be obtained in a definite class or scale of measures adapted to the same system: so that movement should co-ordinate with size under the same system.

(3.) However man obtained knowledge of the practical measure, *the British inch*, by which nature was thought to adjust the planets in size to harmonize with the notation of their movements, it seems he did obtain it, and esteemed its possession as the means of his realization of the Deity—that is, he approached so nearly to a conception of a Being having a mind like his own, only infinitely more powerful, as to be able to realize *a law of creation* established by that Being, which must have existed prior to any creation (kabbalistically called the *Word*). The knowledge thus gained was simply that of the measure spoken of with its uses, in connection with the geometrical elements from whence it sprung.

(4.) This knowledge as to its origin, interpretation, and use, became somehow that of a *caste* condition. As such it was most sedulously concealed, and when set forth it was only in a secret or very obscured way. One way of setting it forth was by *hieroglyphic writing*. This method is the burden of the Hebrew Bible. Another way was by *architectural display*. The greatest ever made was in the great pyramid of Egypt; the next greatest seems to have been in the temple of Solomon.

(5.) It is thought the restoration of this pyramid agreeably to the design of the architect, will afford the means of translation of the hieroglyphic meanings of the Hebrew Bible, as, on hypothesis, the one was written and the other built to set forth the same natural problems.

The first step, therefore, necessary to the deciphering of the hieroglyphic or symbolic meanings of the Hebrew Bible, is the restoration of the great pyramid after its architectural conception. This is the chief burden of this work ; and it is thought that the intent of the architect has been so far recovered as to justify publication. Secondarily, it is to be shown that the Temple was but another architectural style of setting forth the same measures with the pyramid. The balance of the matters, condensed as much as possible into brief outline, chiefly serves to exemplify the method of Biblical application of the pyramid system. This balance is noted here and there in the text, and is contained in the appendices. It serves to relieve the dry details of figures and calculations, to show related connections, and is hoped to excite interest in the whole subject, and to stimulate those who may read, to an earnest effort in the further prosecution of this subject so fascinating in its elucidations.

The relation of 6561 : 20612 is both in the pyramid structure and in the Bible coupled with the form 113 : 355. Some connections between the two will be shown, but what the exact basic relations between them were, as anciently recognized, remains to be discovered.

THE HEBREW ALPHABET.

For the general reader to understand how a numerical or mathematical system may lie closed up in the Hebrew Bible, it may be well to state that the Hebrews, so far as has come down to us, had no numeral system, apart from their literal one—i. e., their alphabet held their numerals, just as if, in English, our *a*, *b*, *c*, stood for 1, 2, 3, and so on, in lack of the Arabic system of numerals, borrowed by us, and now of exclusive use (although it would seem that they were in possession of this system also). The following is a table for reference, giving the Hebrew alphabet, the power of the letters, their symbols to some extent, with the numerical value fixed to each letter. The laws of symbolic use of words as numbers in the narrative of the Bible are not known, and the real uses are only to be accepted or received to the extent for which there is intrinsic proof. Otherwise, it is to be observed that where the letter values rise above units to tens and to hundreds, while the letter character may stand for, say, 20 or 200, very frequently the *characteristic* value is used as giving the expression of the unit value 2 alone. Thus, the letters כרב, or the signs of 2, 20, and 200, may be read by their characteristics of 2, 2, 2, without special reference to the ciphers. So, also, ירש may be read as 123, whereas, by adding as the values are indicated, the sum would be 510. In many instances, too, the right numbers, found by one expression, are also made use of, by a reverse reading, for some other use, connected or not. Again, the use may be of numbers, simply placed above the letters of a word, read perhaps in the reverse, or of the sum of the full values, addition being made. Thus, the above number may be used as 123 or 321, or 510 or 015, agreeably to the indications to be gathered from the context and the connections, or from *determinatives* of the proper or intended use to be found in the text.

A very remarkable feature of Hebrew usage is in the

permissible interchange of letters of like class, and
sometimes of unlike classes—thus, the letters of any one
class, as *gutturals*, etc., are interchangeable, and may be
made use of sometimes without change of the meaning of
the word, frequently for the purpose of working out a
slight modification of meaning, sometimes to indicate a
very marked departure of meaning. A good and very im-
portant illustration of this may be given. The verbal היה,
or Hāyāh, or E-y-e, means *to be, to exist*, while חיה, or
Chāyāh, or H-y-e, means *to live* as *motion of existence*.
The letter ', or *i*, or *j*, or *y*, in these words, is interchange-
able with the letter ו, or *vau*, or *w*, and the two words may
be read as הוה or חוה, without change of meaning. The
first becomes Hāvah, or Eve, and the second becomes
Chāvah, or Ch-v-e, and their meanings, as above, being
so slightly modifications of each other, they are as words
interchangeable one for the other—that is, one may be taken
for the other. Now, the first, literally, is Eve, while, as a
substantive, the second means *mother*, and is, in fact, the
proper name as given in Genesis for Eve, the *mother of all
living*. The Deity name, J'hovah, is a compound of two
words, viz., ', or *Jah*, and *hovah*, or הוה, one of the very
words in question. The word Jehovah, or *Jah-Eve*, has
the primary significance of hermaphrodite existence or
being, as male-female, and is יהוה, of which the ', or *i*,
or *j*, or *y*, stands for *Jah*, or *male*, while הוה is a change
upon the word הוה, for the purpose of getting the *nu-
meral form* of 565 for 865 (originating in the *yoni* word
fish, or נון==565) : חוה as the *woman*, or *Eve*, making
up the male-female word Jah-Eve, was the primary intent,
the less significant word הוה, as of *mere being*, taking
the place of the more significant one, for the sake of the
number value (springing through נון, or 565, as a flux),
which, in another view, as will be seen, is of the utmost,
and really of paramount importance. Thus, while it may
be said that none but a very slight change has been made
in the word forms, as to their meanings, a very marked
change has been made *numerically*, which was the pur-

pose of the change. The great power of kabbala rests
upon this kind of play, and is thus derived. Ordinarily,
grammatically, however, the same is worked under a law
of construction.   Under the title "Orthographic Changes,"
in his Hebrew Grammar, Green says :

"The signs (of the alphabet) thus far described represent all
the sounds of the Hebrew language. Its stock of words is formed
by combining these in various significant ways. The laws of such
combinations, and especially the mutations to which they are sub-
ject, or which they occasion, next demand attention. When a
particular idea has been attached to a certain combination of
sounds, its different modifications may naturally be expressed by
slightly varying those sounds. This may take place—

"1. By the substitution of one letter for another of like charac-
ter, and for the most part of the same organ, e. g.:

הָיָה *to be, to exist;* חָיָה *to live.*
* * *   * * *   * * *

"2. By transposition of letters, e. g.:

פָּרַץ *to deal violently;* פָּצַר *to urge.*
* * *   * * *   * * *

"3. By the addition of a letter.
* * *   * * *   * * *

"Such literal changes as those just recited not only serve to ex-
press new shades of meaning, but even where the meaning re-
mains precisely the same, they may represent *diversities of other
sorts.* * * * The lexicographer regards such words (under-
going such changes) as cognate, and traces them back to their
common source."

These subjects can be but touched on in this work. Vol-
umes have been written on them, and it would be well to
treat them more at large in this connection could it be done
in a manner not to confuse the main object. It must suf-
fice to close with the Alphabet table.

No.		Form and power.		Name.	Symbol.
1.	א	a scarcely audible breathing.		Áleph.	Ox or Bull.
2.	ב	*b, bh,* or *bv.*		Bêth,	House.
3.	ג	*g, gh.*		Gï'mel.	Camel, serpent erect (Sharpe).
4.	ד	*d, dh.*		Dä'leth.	Door, στροφευς, *hinge?*

No.	Form and power.	Name.	Symbol.
5.	ה h; Latin e; Greek ε; smooth breathing (Fuerst).	Hê.	Window opening, womb (Kabbala), also part of *the fence* of the letter ח (Fuerst).
6.	ו v or w.	Vau.	Nail, hook, (crook, Egyptian?).
7.	ז z.	Záyin.	Weapon, (Scepter, Egyptian?).
8.	ח ch, kh, hh; Latin h; Greek H, η; rough breathing, or the Greek x (Fuerst).	Chêth.	Fence, יח, Venus (Scyffarth). Affinity with ה, as the womb.

Note, that the letters ה and ח are from the same source, and are taken as the divided halves of *one oblong* (of two squares), with a little opening in one end as seen in ה. The letter ה is 5, or a cube of five, while ח is 8, showing the number of cubes taken to make a larger one. (So 8 thus used, is the same as 5 duplicated, for 5³=125, and 125×8=1000, and a larger cube made from the smaller of five, will make 5+5, or 10 to the side.)

No.	Form and power.	Name.	Symbol.
9.	ט t.	Têth.	Snake, basket, figured in Eleusinian mysteries in worship by women (Sharpe's Egypt). Perhaps the scrotum,(Inman). Love apples (plural of word for *David*, meaning also *basket*.)
10.	י y, i, or j.	Yôdh.	Hand, bent forefinger, *membrum virile* with testes (Kabbala). The perfect number, or *one* (Kabbala).

No.	Form and power	Name.	Symbol.
20.	כ ך *c, ch, k, kh.*	Caph.	The hollow of the bent hand; with כ = כב = *cube*, measure of hollow sphere (Kabbala).
30.	ל *l.*	Lā'medh.	Ox-goad; sign of a form of the god Mars.
40.	מ ם *m.*	Mĕm.	Watér.
50.	נ ן *n.*	Nŭn.	Fish, symbol of *Yo-ni*, O, woman, or *womb* (Kabbala).
60.	ס *s.*	Sä'mech.	A prop, a pillar; *tes-tis* (Sharpe), hence, egg. Divisions of the circle, perhaps indicating a square. Divisions of Paradise (Kabbala).
70.	ע no power.	Áyin.	Eye.
80.	פ ף *p, ph.*	Pĕ.	Mouth.
90.	צ ץ *ts, tz.*	Tsä'-dhĕ.	Fish-hook, hunter's dart.
100.	ק *k.*	Kŏph.	Back of head from the ears; hence, significant of *balances*. Ancient pillow to rest the back of head on. Scull? Eye of needle.
200.	ר *r.*	Rĕsh.	Head, sphere, circle.
300.	ש *sh, s.*	Shīn, Sin.	Tooth.
400.	ת *t, th.*	Tau.	Cross, +. Foundation framework of construction.

CHAPTER I.

SECTION I.

QUADRATURE OF THE CIRCLE.

By JOHN A. PARKER.

(§ 1.) Kabbala was a species of symbolic writing among the initiated, setting forth the secret teachings of the Bible; and the key of Kabbala is thought to be the geometrical relation of the area of the circle inscribed in the square, or of the cube to the sphere, giving rise to the relation of diameter to circumference of a circle, with the numerical value of this relation expressed in integrals. The relation of diameter to circumference being a supreme one connected with the god-names Elohim and Jehovah (which terms are expressions numerically of these relations, respectively—the first being of circumference, the latter of diameter), embraces all other subordinations under it. Two expressions of circumference to diameter in integrals are used in the Bible : (1.) The perfect; and, (2.) The imperfect. One of the relations between these is such that (2) subtracted from (1) will leave a *unit* of a diameter value in terms, or in the denomination, of the circumference value of the perfect circle, or a unit straight line having a perfect circular value, or a factor of circular value (§ 82).

Of course, as to the fact of these expressions residing in the Bible, it remains to be seen whether this is, or is not, so. It will be sufficiently strange if it is so; but if it shall so appear, beyond contradiction, it will afford much food for thought, as to whether so sublime a work as the Holy Record *can be* a refuge for that so much oppressed and

bedeviled idea of "*squaring the circle*," unless the actual-
ity of such relation exists, or unless an approximate of a
certain nature and value was found to be of some *natural*
use.

(§ 2.) It is very remarkable : One of the values thus
used in the Bible was rediscovered in about A. D. 1585, by
Peter Metius, as 113 for diameter to 355 for circumference,
which, in the Sacred Record, is the imperfect value ; the
other was rediscovered by the late John A. Parker, of the
city of New York, as 6561 for diameter to 20612 for cir-
cumference, which, in the Sacred Record, is the perfect
value. What the means of discovery by Metius were, is
not known.   The "*Quadrature*" of Mr. Parker is in
print, and therein the steps are fully set forth.   As to these,
as they contain the geometrical key for the proper under-
standing of Kabbala, it is necessary to set them forth some-
what at large, premising that his value is obtained through
the value of *areas of shapes*. His leading propositions
(each proposition in the text being followed by its demon-
stration) are as follows :

"*Proposition I.*

" One of the relative properties between straight lines
and a perfect curve or circle is such, that all regular shapes
formed of straight lines and equal sides, have their areas
equal to half the circumference multiplied by the least ra-
dius which the shape contains (which is always the radius
of an inscribed circle), than which every other radius con-
tained in the shape is greater, and the circle has its area
equal to half the circumference multiplied by the radius, to
which every other radius contained in the circle is equal.

"*Proposition II.*

" The circumference of any circle being given, if that
circumference be brought into the form of a square, the
area of that square is equal to the area of another circle,
the circumscribed square of which is equal in area to the
area of the circle whose circumference is first given.

"*Proposition III.*

" The circle is the natural basis or beginning of all area, and the square being made so in mathematical science, is artificial and arbitrary.

"*Proposition IV.*

" The circumference of any circle being given, if that circumference be brought into any other shape formed of straight lines and of equal sides and angles, the area of that shape is equal to the area of another circle, which circle being circumscribed by another and similar shape, the area of such shape circumscribing the last-named circle is equal to the area of the circle whose circumference is given.

"*Proposition V.*

" The circumference of a circle by the measure of which the circle and the square are made equal, and by which the properties of straight lines and curved lines are made equal, is a line outside of the circle wholly circumscribing it, and thoroughly inclosing the whole area of the circle, and hence, whether it shall have breadth or not, forms no part of the circle.

"*Proposition VI.*

" The circumference of a circle, such that its half being multiplied by radius, to which all other radii are equal, shall express the whole area of the circle, by the properties of straight lines, is greater in value in the sixth decimal place of figures than the same circumference in any polygon of 6144 sides, and greater also than the approximation of geometers at the same decimal place in any line of figures."

Under this proposition after his demonstration, he states : "And it is evident that if a circle, and a polygon of 6144 sides (the number to which Playfair carries his bisection), shall have the same circumference, the area of the circle is greater than the area of the polygon in the sixth decimal place ; and because the circumference of one diameter must

be four times the area of the circle, therefore, by the tran-
sition of shape to a circle, the true value of circumference
is greater in the sixth decimal place than any approxima-
tion which can be obtained from a polygon of 6144 sides,
whether inscribed or circumscribed."

"*Proposition VII.*

" Because the circle is the primary shape in nature, and
hence the basis of area ; and because the circle is meas-
ured by, and is equal to the square only in ratio of half its
circumference by the radius, therefore, circumference and
radius, and not the square of diameter, are the only na-
tural and legitimate elements of area, by which all regular
shapes are made equal to the square, and equal to the cir-
cle.

"*Proposition VIII.*

" The equilateral triangle is the primary of all shapes
in nature formed of straight lines, and of equal sides and
angles, and it has the least radius, the least area, and the
greatest circumference of any possible shape of equal
sides and angles.

"*Proposition IX.*

" The circle and the equilateral triangle are opposite to
one another in all the elements of their construction, and
hence the fractional diameter of one circle, which is equal
to the diameter of one square, is in the opposite duplicate
ratio to the diameter of an equilateral triangle whose area
is one.

" By diameter of the triangle, the perpendicular is here
meant, as explained in the introduction to Chapter I., or
a line passing through the center of the triangle, and per-
pendicular to either side.

" Let it be supposed that the areas of the equilateral tri-
angle A and the square C each equals *one*.

" It has been shown (Proposition VIII), that the triangle
has the least number of sides of any possible shape in nature
formed of straight lines ; and the circle is the ultimatum
of nature in extension of the number of sides.   In this par-

ticular, therefore, they are opposite to one another in the elements of their construction. By Proposition VII it is shown that circumference and radius are the only natural and legitimate elements of area by which different shapes may be measured alike, and are made equal to one another. By Proposition VIII, it is shown that the triangle has the *least* radius of any shape formed of straight lines of equal sides and of the same circumference, and by Propositions II and IV, Chapter I, it is seen that the circle has the *greatest* radius of any possible shape of the same circumference. By the same propositions, the triangle is shown to have the *greatest* circumference and the *least* area of any shape formed of straight lines and equal sides, and the circle is shown to have the *least* circumference and the *greatest* area of any shape. By a well-known law of numbers and geometry by which the greatest product which any number or any line can give, is, to multiply half by half, it will be seen that if we take the aggregate of circumference and radius in each shape, it is most *equally* divided in the circle, and the most *unequally* divided in the triangle of any possible shape. In *every* case, that which is *greatest* in the triangle is *least* in the circle, and that which is *least* in the triangle is *greatest* in the circle ; and in every particular the two shapes are at the extreme and *opposite boundaries of nature*, being the *greatest* and the *least* that *is possible*. They are, therefore, opposite to one another in all the elements of their construction. There-

fore, the square being made the artificial basis of area
(Proposition VII), if the diameter of the circle B (Plate
XVI) shall equal the diameter of the square C, then, in
the fractional relations of B to C such diameter shall be in
the opposite duplicate ratio to the diameter of A corre-
spondingly situated.   The diameter of A correspondingly
situated with the diameter of B to C, it will be seen, is a
line drawn across the center of A perpendicular to either
side ; therefore, the diameter of B, in its fractional relation
to C, is the opposite duplicate ratio to the *perpendicular*
or diameter of A, and no other result is possible in the na-
ture of things. (See Proposition VII, Appendix, and re-
marks following.)   *The proposition is therefore demon-
strated.*

"*Proposition X.*

" The fractional diameter of one circle which is equal to
the diameter of one square, being in the opposite ratio to
the diameter of the equilateral triangle whose area is one,
equals 81.
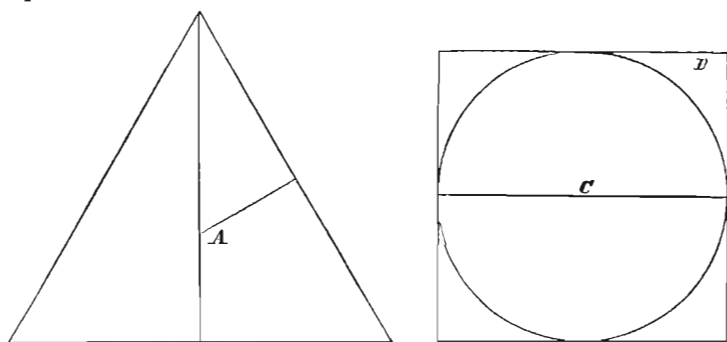
" Let the area of the equilateral triangle A (Plate
XVII) =1, and let the area of the square B also equal *one*,
then the diameter of the circle C, which is equal to the
diameter of the square B, also equals *one*.   And it has
been demonstrated that in their fractional relations to the
square, the diameters of A and C are in opposite ratio to
one another.   (By the diameter in the triangle it is known
that the perpendicular is here meant, as in Proposition IX.)

Now, if the area of the equilateral triangle A shall equal one, then the diameter of A is found to be equal to the square root of three twice extracted, or $\sqrt{}\sqrt{3}$. Hence the fractional diameter of C, being in the opposite duplicate ratio (which is the squares of diameter), shall equal 3 twice squared, or $3^2 \times 3^2$, and $3 \times 3 = 9$, and $9 \times 9 = 81$. The proposition is therefore demonstrated."

The opposite duplicate ratio of Mr. Parker has relation to the numerical values. The shapes being opposite to each other, he desires to get an *integral* number to co-ordinate with the shapes. When the area of A=1, then the diameter is found to be 1.316074+. But this will not do, for, if possible, it must assume the form of a least integral number. Square this value, and it equals 1.7320508+. This will not do. Square it again, however, and it equals 3, which is just that to be desired. Having, however, obtained this, the value in the opposite ratio must suffer the same process, and $3^2 = 9$, and $9^2 = 81$.

"*Proposition XI.*

" The fractional area of one square, which is equal to the area of one circle, equals 6561 ; and the area of the circle inscribed in one square equals 5153."

" It has been proved (Proposition X) that the fractional diameter of the circle C, which is equal to the diameter of one square (B), whose area is one, being in the opposite ratio to *a b* (Fig. A), equals 81 ; hence the area of B= $81 \times 81 = 6561$; therefore, B equals one of 6561 equal fractional parts. Now, let B equal H in area. It has been proved (Proposition II) that H equals E in area ; and if H=1, then E=1 ; and if H=6561, then E=6561. It has also been proved (Proposition II) that if the circumference of F equals the circumference of E, then F and G are also equal in area. And because one circle, which is equal to one square (the area of the square being one), is in 6561 equal fractional parts, therefore, *any* circle which is equal to *any square* (the diameter of the circle being a whole number) shall be in some definite and certain number of

6561 parts. Hence, the areas of the circles C and G
(their diameters being each 81) are some definite and cer-

tain number of $\overline{6561}$ parts of B and H.   It is proved by
the approximations of geometry, obtained by the proper-
ties of straight lines, that C and G are each greater (much
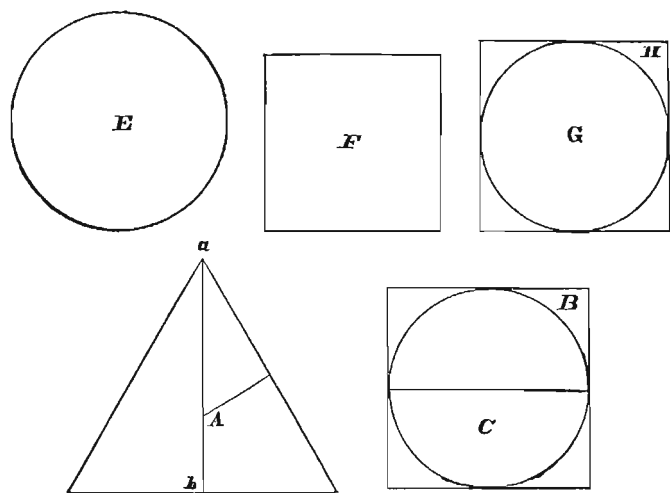
greater) than $\dfrac{5152}{6561}$ parts of B and H, and less (much less)

than $\dfrac{5154}{6561}$; therefore (*Reductio ad absurdum*), they *shall*

be each $\dfrac{5153}{6561}$, because they *can be nothing else*, there being

no other $\overline{6561}$ part between 5152 and 5154.

    " The proposition is therefore demonstrated ; and the frac-
tional area of one square, which is equal to one circle (the
area of each being one), is 6561, and the fractional area of
one circle inscribed in such square is 5153."

    The expression, " It is proved by the approximations of
geometry, obtained by the properties of straight lines,"
contains a very subtle allusion and meaning.   Mr. Parker
approves the approximate value, as obtained by Playfair,
after the method of its obtainment, viz., by the properties
of straight lines, where such lines are defined as being

without *breadth or thickness.* Assuming the property of breadth to a line or unit of measure, or obtaining the value of it by means of *area computation*, works a change on the Playfair result necessarily. Now, if Mr. Parker is correct in his taken relation between triangle and circle to obtain a least integral unit of measure—i. e., the number 3—then, without at all conflicting with the Playfair results, his own are right, if Playfair's are so. (See Reflections on the Quadrature, § 7.)

"Proposition XII.

" The true ratio of circumference to diameter of all circles is four times the area of one circle inscribed in one square for the ratio of circumference, to the area of the circumscribed square for the ratio of diameter. And hence the true and primary ratio of circumference to diameter of all circles is 20612 parts of circumference to 6561 parts of diameter."

" It will be known that if the diameter of the circle G inscribed in H=1, then the area of H also=1. It will be known, also, that the area of G equals half of the circumference multiplied by half the diameter, and $\frac{1}{2}\times\frac{1}{2}=\frac{1}{4}$;

hence, the diameter of G being *one*, then the area of G equals $\frac{1}{4}$ its circumference, and, *vice versa*, the circumference of G equals four times its area. And the diameter of G being one, it therefore equals the area of H, because the area of H=1. Therefore, the first part of the proposition is demonstrated, and four times the area of any inscribed circle for a ratio of circumference, to the area of the circumscribed square for a ratio of diameter, is seen to be a true ratio of circumference to diameter of *all circles.*
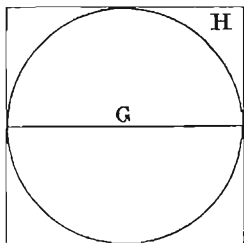
" It has been proved (Proposition XI) that by the primary relations existing between straight lines and curved lines, as developed by the opposite ratio of the equilateral triangle and the circle, the fractional area of H=6561, and the

area of $G=5153$; *therefore*, the true and primary ratio of circumference to diameter of all circles$=4$ G, for the ratio of circumference to the area of H for the ratio of diameter; and since $G=5153$, and $H=6561$, *therefore* the *true* and *primary* ratio of circumference to diameter of all circles $=5153\times4=20612$ parts of circumference to 6561 parts of diameter."

"The proposition is therefore demonstrated, and the quadrature of the circle is demonstrated."   Mr. Parker should have added, to be explicit, and exceptional to the Playfair method, "by way of area computation."

QUADRATURE BY PETER METIUS.

(§ 3.)   Some years ago, while examining into the reasoning of Mr. Parker, the author found notice of the ratio of *Metius*.   He wrote Mr. Parker, asking him if he was acquainted with the grounds on which Metius obtained it. He replied that he was not; but, upon testing the ratio sent by his own, he found some very curious numerical relations of difference.   Subsequently, in a proposed second edition of his work (published after his death), he notices this ratio and these relations as follows:

"The ratio of Metius, known for more than a century past (113 to 355), is the nearest approximation to the truth ever made in whole numbers; but it does not answer the imperative law contained in our twelfth proposition, and therefore it can not be true.   *The circumference can not be divided by four, without a fraction or remainder.*   By whatever means Metius may have obtained his ratio, its examination shows it to be of *the same composition as mine, but improperly divided.*   For example, if 113 shall be the diameter of a circle, then circumference (355) is $\frac{1}{20612}$ part too little.   But if 355 shall be the circumference of a circle, then diameter (113) is $\frac{1}{6561}$ too big.   It

thus affords a very perfect evidence that my ratio 20612 to 6561 is the true one, as we have fully proved it to be."

The conclusion thus drawn does not seem to be so manifest as stated. The relation between the two ratios is, however, very, yes, exceedingly remarkable, as the statement will show :

$$20612 \; : \; 355 \; :: \; 6561 \; : \; 112 \frac{20611}{20612}$$

$$6561 \; : \; 113 \; :: \; 20612 \; : \; 355 \frac{1}{6561}$$

(Mr. Parker has confused the results.) The relation seems to be one which has, at some time, been found as a variant on the Parker forms, because of showing the same composition, as he says. The reverse of the case will not hold ; for, if the Parker forms be tested by those of Metius, no similar relation will be found to exist ; therefore, it would seem that those of Metius were derived from those of Mr. Parker.

SECTION II.

REFLECTIONS ON THE QUADRATURE BY MR. PARKER.

(§ 4.) It is averred that the quadrature by Mr. Parker is of great value. It is not, however, because of the intrinsic value of his work that it is so largely set forth ; nor is it from any immediate motive to advocate or sustain it. It is (1) because his can be shown to be that identical measure which was used anciently, as the perfect measure, by the Egyptians, in the construction of the great pyramid, which was built to *monument it and its uses;* (2) because, from it, the *sacred cubit value was derived*, which was the cubit value used in construction of the Temple of Solomon, the Ark of Noah, and the Ark of the Covenant—the value of all which consisted in the value of the measures used ; (3) because it affords that *kabbalistic value*, which, before all others, conveys in the Bible the idea of God, the mean-

ing of the term, and the value of His works in the Cosmos;
(4) because the geometrical symbols out of which it is seen
to spring, with their primary numbers, are seen to have a
kind of *elemental relation to each other*, and were made
use of in the mysteries to convey the *esoteric teachings;*
and, finally, (5) because it appears bound up in, and as
making a fundamental part of, the British system of *long
and land and time* measures.   If these statements are true,
there will admittedly be no use to assert that it is well
worthy of being set forth.   All who appreciate the intense
labor of research for light upon these matters will attach
a value to this work of Mr. Parker far beyond that of the
standard method, even though it should be defective, be-
cause its value will consist in its being *a literary key*, such
as has never yet, it is thought, rewarded the generations
upon generations of searchers in the Bible, in mythology,
and in the antiquarian fields.   In this view, the question
simply of its mathematical value is one of the least possi-
ble importance *as a primary one;* although once recognized
to have been used as stated, there is no doubt but that it
would cause the foundations of the standard methods to be
reviewed with an intensity of thought, which might, per-
haps, in the end, establish Mr. Parker's method as the one
giving a more useful result—i. e., perhaps, such an inte-
gral one, in area computation, as could be followed or
copied after in material construction ;   albeit, it might,
just as the Playfair method, be, after all, but an approxi-
mation.   With this apology, it may be well to suggest some
thoughts in relation to this quadrature value, which, to
some extent, are worthy of attention, and, to some extent,
are curious.

MR. PARKER'S QUADRATURE VALUES OBTAINED BY AREA COM-
PUTATIONS.

(§ 5.)   It seems to be of importance, and it will be ob-
served, that, from beginning to end, Mr. Parker seeks
the quadrature through area measure, in terms of area,
and finally obtains his numerical value of rectification by

an area computation. His numerical values are all area values to correspond with his geometrical figures; and even so in this final value, for it is in area terms where it exhibits a necessary value of linear measure of circumference. This being the case, it is evident that his computations are susceptible of material realizations, as in object-building or copying. If his process is correct, then, under his Proposition XI, he has raised a test by which to work a change on the standard method to make it conform to area conditions and requirements. The fact that independently he has reproduced exactly the same formulæ which the ancients had, which formulæ had with them application to the same common end, viz., relation of diameter to circumference, goes far to prove that *his steps* of ascertainment must have been the same as with them, though they may have had other and more satisfactory methods of illustrating and enforcing the result. His process seems to depend for its correctness upon the rightness of his ground of the opposite qualities of the triangle and circle. If this is rightly taken, his numerical integral relation founded on the number 3 must be right. His final step for obtaining the area 5153 of the inscribed circle depends upon the question whether the *Legendre*, or *Playfair approximate*, is right as a transcendental one.

CURIOUS FEATURES OBSERVABLE IN THE DETAILS OF THE PLAYFAIR METHOD.

(§ 6.) It must be known that the results as to the value of π, by Legendre and Playfair, were not of universal acceptation. They were, for instance, criticised as being incorrect, by Torelli, in the preface of an edition of the works of Archimedes, printed at Oxford. Reference is made to this preface, and also to Playfair's comments on the same, as they are to be found in the supplement to Playfair's Euclid. Torelli held, according to Playfair:

" That it is impossible, from the relation which the rectilineal figures inscribed in, and circumscribed about, a given curve have to one another, to conclude anything concerning the properties

of the curvilineal space itself, except in certain circumstances, which he has not precisely described."

The following practical truths seem to the author to be exceedingly remarkable as looking, in this specialized way, toward the support of Torelli's assertion, though no assertion must be considered as made that it affects the truth of the general results of the Legendre method.

The burden of the effort of Legendre is to show that by the growing diminution and equality between the circumscribed C'B' and the inscribed C B, the curved line penned up between them becomes measurable ; which curved line, at any stage of bisection, being an even and known part of the whole circle, from it the length of the entire circumference, and consequently the area of the curved space, is to be had.   The measure of this growing equality is always to be tested by the difference of value, at any stage of bisection, between C B and C'B'.   In the diagram, which may stand for any stage of bisection, C B' is the chord of half the arc, and therefore E E' is B B' for every succeeding bisection.   Now, from B', as a center, with C B' as a radius, describe the arc C D.   Then C'D will be the quantity which, vanishing by diminution, the triangle C B'C' will eventually become C B'D, and isosceles ; when the curve lying between C B' and D B' *must*, by hypothesis, become equal to C B', or to D B', as a straight line.   Now, as a fact, taking the value C'D (the difference between C B and C'B') and E E', for a number of bisections, and it will seem to show that, with relation to the diminution of C'D, E E' is increasing, and by an increasing ratio.   It becomes a question, on the showing, whether the arc is not, *relatively*, separating from,
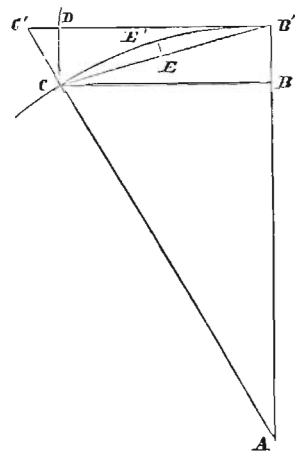
instead of approaching, the chord. If so, the question is, what is the effect of this? What does it mean? If E E' is thus increasing, what is the value of the arc becoming?

Is there some incompatibility between the geometrical conditions, as presented to the eye, and the numerical calculations of these forms? The rigid result of such a condition would seem to be that, the ratio increasing, the step would come where, as Mr. Parker avers, C B' curve would necessarily pass in value beyond that of C'B' diminished—an absurd conclusion, unless some unnoticed incompatibility has existed between the condition of the curve and the calculations of the sides of the polygons. It is possible that this may be the case, since, in fact, the relations between them are not known, but only inferred. Practically, a calculation of the value of π to 6144 sides of the polygons, taken from the base that the perimeter of the polygon of six sides is *one* with twenty-five ciphers, making the radius one with 6 repeated twenty-four times, yields the following data as to the relation *or ratio* between C'D and E E', as they respectively diminish with continuing bisections of the arc :

6 sides,	C'D	: E E'	::	1	:	0.5706
12 "	"	"		1	:	1.2404
24 "	"	"		1	:	2.5301
48 "	"	"		1	:	5.0847
96 "	"	"		1	:	10.1818
192 "	"	"		1	:	20.3697
384 "	"	"		1	:	40.7426
768 "	"	"		1	:	81.4882
1536 "	"	"		1	:	162.9917

which shows a rapid ratio of diminution of C'D with relation to that of E E' : and the practical diminution of C'D may be judged of from a statement of its value at 6 sides and 6144 sides, as follows :

6 sides, C'B' = 962250448649

"   C B' = 862730150341

C'D, or difference = 99520298308

6144 sides, C'B' = 000852211623
C B' = 000852211539
C'D, or difference =   84

which simply seems to show that the triangle C B'C' is approaching to being isosceles unattended by a relatively rapid approximation of the chord C B' to the curve C B'. But the relation of this approximation can be had by a statement of the continuing ratios between B B' and E E', and these are as follows:

E E' for	6	sides	:	B B'	::	1	:	3.9318516
"	12	"		"		1	:	3.9828897
"	24	"		"		1	:	3.9989291
"	48	"		"		1	:	3.9997322
"	96	"		"		1	:	3.9999330
"	192	"		"		1	:	3.9999832
"	384	"		"		1	:	3.9999958
"	768	"		"		1	:	3.9999989
"	1536	"		"		1	:	3.9999997

Does not this simply show that while the ratio of E E' to B B' can never become 1 : 4, the ratio of C'D to E E' can become 1 : ∞ large? which mathematically expressed means that the triangle C B'C' may become isosceles, while yet, absurdly enough, the chord and arc have not as yet assimilated? Not only so, but have separated by a, relatively, infinite quantity.

*   *   *   *   *   *   *   *

MATHEMATICS IS FAMILIAR WITH DEFINITIONS WHICH ARE UNTRUE.

(§ 8.) It is unfortunate for mathematics that, in attempting to set forth methods of comparative measures of right and curved lines, it has been found necessary to assume truths as the very groundwork of such measures, which, in fact, and in the nature of things, are not so. As to the Calculus, for instance, its results are taken as *exact*, when the differentials, which are real quantities belonging to those results, are eliminated; because, as it is said, on

account of their smallness, they can afford to be dropped.
The very inception of Newton's "*Principia*," for another
instance, is founded upon a geometrically false statement,
as regards exactitude of definition—palpably so. His
"Lemma I" states : "*Quantities and the ratio of quanti-
ties, which in any finite time converge continually to
equality, and, before that time, ap-
proach nearer the one to the other,
than by any given difference, ulti-
mately become equal.*" Let A B C be
any triangle, and with the length
A B as a radius, let the arc B D be
drawn to intercept the line A C.
Suppose this figure, both for trian-
gle and segment of circle, be con-
tinually and proportionately re-
duced, as A B'C', A B'D'; the *rela-
tive* differences will never be
changed, and, consequently, the ra-
tios of difference will always remain
the same. The proposition is axiomatic, and does not
require demonstration. But take the triangle A B C,
with the circular area A B D, as decreasing toward A B,
by different and successive steps, one of which is, say,
A B E, with the circular area A B F. By this method, no
geometrical ratio can be preserved. The ratio of diminu-
tion has to be calculated by numerical combinations. But
there being a ratio of diminution, in which the difference
between the straight line and the curve is, say, a decreas-
ing one, it is, nevertheless, plainly to be seen that the only
equality of the curved line B D with the straight line B C,
in any possible diminution, will be when the line A C shall
so close upon A B as to wholly coincide with it (as to the
value of their lengths now or at last becoming alike), and
become, with A B, one and the same line, at which stage
or condition there can be neither curved line nor straight
line left for comparison : therefore, so long as those lines,
i. e., C B straight, and B D curve, exist at all, either in

whole or in part, there can, by possibility, be no equality
between them.   Hence, the *lemma* is false in its terminol-
ogy ; nor is it even right in a showing of a growing or
proximate equality, as regards the *ultimate structure* of the
lines, as was shown above.

There is a certain ridiculousness in the matter, in this,
that while the schools assert the impossibility of there being
an integral relation between circle and square, because of
the essential difference between a curved and right line
(which is true to all intents), the possibility of this integral
relation is here, by inference, falsely set forth and maintained.
It is *because* a line has breadth that a curved and straight
line are not comparable.   Straight and curved lines con-
ceived of as without breadth may be taken as comparable,
because of the possibility of their reduction to points.

NATURE SEEMS TO AFFORD CONFIRMATORY EVIDENCE THAT MR. PARKER IS RIGHT.

(§ 9.) Mr. Parker is of opinion that there is in numbers
some, so to speak, flux of notation of quantity, by which
geometrical shapes can be integrally noted as changing the
one into the other.   Thus, if he is right, there is a unit
square, which is of the denomination of $\frac{1}{6561}$ of a square
area, while it is also at the same time of a denomination of a
$\frac{1}{5153}$ of a circular area.   Evidently, then, whatever rectan-
gular figure is represented in terms of this unit square, its
equivalent circular area value in integrals can be given in
the same terms ; as, $\frac{4}{6561}$ of a square $= \frac{4}{5153}$ of a circular
area.   It may be that nature assumes, in some of her prac-
tical constructions on the principles of plane and spherical
geometry, a least cubic one ; and it may be that it is in
terms of this least one that she performs her works, *ap-
proximating* the form of a sphere by its use.   It may be
that Mr. Parker's method is right as a natural mechanical
one, while that by Playfair may be right as a transcendental
one.   It is certain that nature does lend some data as

touching some of her methods of construction. The condition of substance to form what is called *water*, is one resting upon the quality of *heat* as affecting atomic particles of matter. *Heat* being but a modification of *motion of particles*, a spheroid or drop of water is such because of its particles being in some peculiarity of motion on *themselves*, through perhaps the intervention of some subtler substance in which the atoms may act. Thus the globule, or spheroid, of water is formed. The effect of cessation of this motion is indicated by a cessation of spheroidal shape. *Motion* giving place to *rest*, the change is characterized by change of *shape;* and this change seems uniformly to be that, as to shape of particles, of the equilateral *triangle* as part of a hexagon. On this form, other shapes take place. In one form, at and growing out of the corners of the hexagon, are little *squares* or *cubes*. (See description by Professor Tyndall of these forms, as becoming manifested in the breaking down of ice particles in the interior of a mass, when heat rays are passed through it.) In this shape the substance has become *ice*. If, chemically, the components of water are in integral atoms, and if, in its structural form, in passing from shape to shape, it passes from one integral form to another, *as to shape*, this would serve as a strong hint that nature recognizes the alliance and interchanges of shapes in subdivisions of wholes not fractions. It is noteworthy that the primary *material one* here indicated in ice seems to be triangular or pyramidal, then cubic ; and this in a measure serves to strengthen Mr. Parker's assertions, for it is on the triangle as the natural originator of plane shapes that he raises a least integral in the number 3, by which to express the value of the circle in terms of the square and cube ; and, again, he accomplishes this by an integral relation, so close to the Playfair transcendental one, that the difference only becomes manifested at the sixth decimal place, in a circumference taken to a diameter of unity.

SECTION III.

PROBLEM OF THREE REVOLVING BODIES.

(§ 10.) It is thus seen that the process of Mr. Parker is founded geometrically upon the elements of the circle and of the equilateral triangle, being, as related to each other, the extreme opposites in nature, of which the circle is the primary of all shapes, and hence the basis of all area, and the triangle is the primary in nature of all shapes formed of straight lines, and of equal sides and angles. Of these, the equilateral triangle is numerically measurable; and it being requisite to translate shapes by numbers, as to the conditions required of a least numerical integral value, with which to determine the value of the circle, that integral least number is found to be 3. By means of this shape and this integral he obtains the value of the circle, that shape of greatest extension as compared with the triangle, in terms of the square. Numerically, $\sqrt{}\ \sqrt{}\ 3$ is opposed by $3^2 \times 3^2 = 81 =$ diameter of his square, or the length of its side. $81^2 = 6561 =$ area of his square, in terms of his least numerical integral. The area of the contained circle $= 5153$; and, by the process set forth, changing area value to represent rectification, diameter being 6561, circumference $= 20612$. The results, therefore, are:

(1)   Area of square $=$ 6561 ⎫
      Area of contained circle $=$ 5153 ⎭

(2)   Diameter of circle $=$ 6561 ⎫
      Circumference of circle $= 5153 \times 4 = 20612$ ⎭

PROBLEM OF THREE REVOLVING BODIES, BY MR. PARKER.

(§ 11.) Mr. Parker follows up the ascertainment of these data with his problem of three revolving bodies, founded upon the principles of the quadrature. This problem is as follows:

"*Proposition I.*

" The respective and relative motion of three gravitating bodies revolving together and about each other is as *four* to *three*, or *one* and *one-third* of one primary circumference.

" I have always considered this proposition as self-evident on the face of it, and that no mathematician would deny it and hazard his reputation on sustaining the denial with proof. But, as I shall perhaps be called on for proof, I add here, at some length, the solution of the problem, after my own method, as follows :

" The problem of three gravitating bodies revolving together and about each other is one which, like the quadrature, has hitherto baffled all attempts of mathematicians to solve. But since this, like others of the kind, is of itself a problem, which is daily performed and consequently solved by the mechanical operations of nature, the failure of mathematicians to reach the solution proves nothing but the imperfection of the reasoning applied to it.

" It is a principle, I think, clearly demonstrable, that whatever can be constructed by mechanics out of given magnitudes, can be *exactly* determined by numbers, and that which can not be constructed by mechanics out of any given magnitudes, can not be exactly determined by numbers, having the same relation as the magnitudes one to another. It is for this reason, and for this reason only, that we can not, *out of* the *same magnitudes*, construct a square which is just twice as big as any other perfect square ; neither can we find the perfect root of such a square by decimal numbers. If this reasoning be true, then, because the problem of three gravitating bodies is a mechanical operation daily performed in nature, it is hence a thing capable of being proved by numbers. The great difficulty of this problem has arisen, I think, from the impossibility of its full display by diagram, and the difficulty of embracing, in any formula, all the conditions contained in its elements. The plan of exacting a display by diagram of all the geometrical propositions is *safe*, and perhaps it

is the only plan by which the yet untaught mind can be initiated into the truths of geometry; but is it always necessary in every original demonstration? Are there not other means equally true and *equally safe* in the hands of one accustomed to examination, and acquainted with the properties of numbers and of shapes? I think there are; and, without taking the least unwarrantable latitude, or departing from the clearest perceptions of reason, I think this problem may be easily and accurately solved.

"The thing required of every demonstration is, that it shall give a *sufficient reason* for the truth which it asserts. But, in order that a reason may be *sufficient*, and the conclusion drawn from it *safe*, it is necessary, not only that the relations of cause and effect shall be made clear to our perceptions, but also that the conclusion, *when drawn*, shall abide the test of practical application. Any demonstration which does less than this can not be relied on, and no demonstration ever made has ever done more than this.

"We know very well that things are possible or impossible to be done, only in proportion as the means applied are adequate or inadequate to the purpose. We know also, that because different principles exist in the various forms of matter, therefore it is impossible to demonstrate everything by the *same means* or *same principles*. It is a narrow-minded prejudice, therefore, which exacts that every demonstration shall be made by the prescribed rules of science, as if science already embraced every principle which exists in nature. Yet none are more frequently guilty of this narrow-mindedness than mathematicians, who often require that things shall be done by the means which the written science affords, well knowing at the same time that such means are *inadequate*. Such has always been the case in respect to the quadrature of the circle. Mathematicians have demanded that it should be demonstrated by the properties of straight lines, knowing at the same time that straight lines are *inadequate*. Therefore (*and therefore only*) the thing has been found impossible, and all other demonstrations are rejected, because they can not be shown

by straight lines. I do not consent to such unreasonableness of decision ; but, in every proposition where the *sufficient reason* is manifest, I hold the proposition to be demonstrated until it can be disproved.

" In entering upon the solution of the problem of three gravitating bodies, we must first examine and see of what elements the problem is composed.

" The elements which I shall consider in this case, will not be such as a mathematician of the schools would think it necessary to consider. They will be far more simple, more conclusive (for such as the schools can furnish, have yet decided nothing), and I think, more comprehensible, yet equally true to nature (for I consult nature's laws only, and not the method or opinions of any other man), and equally accurate and precise with any which can be given by any other method.

"And, *first*, each revolving body is impressed by nature with certain laws making it susceptible of the operation of force, which being applied, impels motion. These laws may all be expressed under the general term *forces*, which, though various in their nature, possess an equalizing power, controlling each other in such a way that neither can predominate beyond a certain limit ; and consequently, these bodies can never approach nearer to each other than a certain point, nor recede from each other beyond another certain point. Hence these forces are, at *some mean point*, made perfectly equal, and therefore they may be considered as but *one force*, and hence but *one element* in the problem.

"*Secondly*, these revolving bodies have magnitude, shape, density, etc., which affect the operations of force in producing motion. These properties of revolving bodies have all the same inherent power of equalization as forces. For example, if density be greater in one than another, then magnitude will be relatively less, force will be less (the direct force), and the momentum from velocity greater, but the whole shall be equal. On the other hand, if magni-

tude be greater, and density less, then force will be greater, and velocity less, but the whole shall be equal.

"The second element of this problem may therefore be comprehended under the term *magnitude*, which shall include shape, density, and every other quality or condition which affects the operation of force in producing motion, and the whole constitute but one element in the problem, which I term *magnitude*, as referring to the bodies themselves rather than to any of their qualities, as density, gravity, or otherwise.

"The *third* element in this problem is *distance*, by which I would be understood to mean *the chosen distances* from one another, at which these bodies perform their revolutions in space. It is well understood, that from the nature of the case, these revolving bodies must take up their mean distances from one another in exact proportion to their respective magnitudes and forces, and in proportion as these are greater or less, the distance from each other will be greater or less. Hence it is seen that the same inherent power of equalization exists in respect to distances as in respect to the forces and magnitudes, and whether their distances from each other be greater or less, equal or unequal, they still constitute but one element in the problem.

"The *fourth* and *last element* in this problem is *motion*, or *velocity*, by which distances are to be performed or overcome by revolution. And here again, it will be seen, that because the distances to be thus performed by revolution depend entirely on the *chosen distances* from one another, and these again depend on magnitude and force, therefore the same equalizing power exists in regard to *motion* or *velocity*, as exists in regard to all the other elements, and therefore this also constitutes but one element in the problem, which I will term velocity, as including momentum, and every other quality, condition, or effect of motion.

"These, *four in number*, are all the elements necessary for the *mechanical* performance of the problem, and consequently all that are necessary for its *determination* by *numbers;* and it has been seen that such is the nature of the

problem itself, and the power of these elements over one another, that every other quality or condition affecting either, is equalized by, and held in subservience to these, and these again are equalized by, and held in subservience to *one another*, and all controlled by magnitude, so that the whole constitute but *one problem* or *mechanical* operation, in which *four elements* are concerned.

"The difficulty of reducing impalpable things to a palpable standard of measure is generally conceded; but, in this case, I think the difficulty does not exist, and that these elements may all be as truly represented by numbers and magnitudes as if they were palpable things in themselves, having the qualities of length, breadth, and thickness.   For example, let a stone be a magnitude, having shape, bulk, density, etc.   Now, a *force* which can raise this stone one foot from the ground, and hold it suspended there, is, in its relation to the magnitude or stone, exactly equal to *one foot* of measure ; and because the stone is held suspended, and does not descend again, nor rise higher, it is evident that the force and magnitude have *become equal at that point of elevation*, and therefore, *vice versa*, the magnitude or stone is, in its relation to the force, exactly equal to *one foot* of measure, and consequently distance and motion are each also seen to be equal to one foot ; and. the same principles of applicability to measure exist in *three* bodies suspended in space, and made to revolve about each other by forces inherent in themselves.   It matters not that other and disturbing forces exist outside or inside the space in which these bodies revolve, because, if another and disturbing force be considered, then it ceases to be a problem of *three* gravitating bodies ; and also, because such disturbing forces, if they exist, operate proportionally on all *three* of the revolving bodies, and in the course of a revolution, and consequent change of *relative position*, these disturbances *must find* their perfect equality.

"Now, let us suppose that we have here three bodies, revolving together in space by their own gravitating power,

and let the magnitudes of these bodies be exactly equal to
one another : then their
forces shall be equal,
their distances equal,
and their velocities
equal, and it will be
seen that they *can not*
revolve *about each
other*, but must *follow
each other* round a com-
mon center, and their
relative motion, in re-
spect to any point in
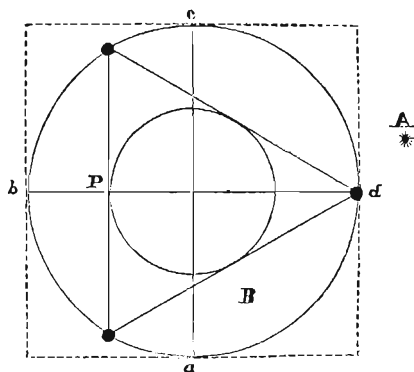
space (as the point or star A) must be on the value of the
circumference of the circle B, which passes through the
center of each body, as in the accompanying figure.

" Now, let us suppose that each of the elements contained
in the problem of *three* gravitating bodies, is an equal por-
tion of the *area* of the circle which these bodies describe
in a revolution ; then the circle will be divided from the
center into four equal parts, as at the points *a*, *b*, *c*, *d*, and
let each part equal *one*. It will be seen that in each rela-
tive change of position, each revolving body passes over
an area equal to *one and one-third*. In other words, their
relative motion is as *four* to *three*. So, also, if each ele-
ment shall be an equal portion of the circumference of the
circle B, or an equal portion of the square of the diameter
of B, the same result is manifest, and the relative motion
of each revolving body is as *four* to *three* of such magni-
tude as is made the standard of measure.

"Again : *Secondly*. Let the area of the circle *inscribed*
in the equilateral triangle, whose sides make the distance
between these revolving bodies, be *one*, as in the following
figure. It is seen that the circle B, whose circumference
these bodies describe by their revolution, is four times
greater than such *inscribed* circle. (See Plate XXXI,
Appendix.) Hence, again, their relative change of posi-
tion is seen to be as *four* to *three*, or one and one-third of

the primary magnitude which is made the standard of measure, and (Proposition I, Chapter II) it is seen that the
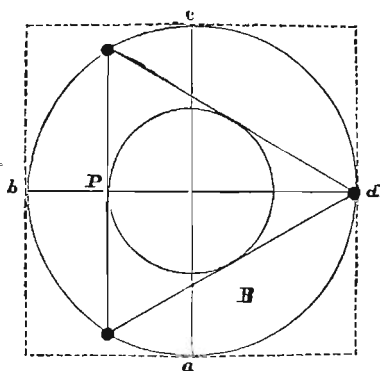
circle inscribed in the triangle, as above, forms the basis of the area of that triangle, when it shall be measured by circumference and radius, w h i c h are the o n l y legitimate e l e- m e n t s of area in all shapes alike.

"Again : *Thirdly*. It is seen that the equilat- eral triangle [see preceding figure], whose sides make the distance between these revolving bodies, is an angular shape and being measured in the usual way of measuring angu- lar shapes, its area equals the perpendicular P *d*, by half the side. Now let the perpendicular P *d*, equal *one*. Then it is seen that the diameter of the circle B, which these bodies describe in a revolution, is one-third greater than the perpendicular. Hence, in performing a complete revolu- tion, these bodies describe a circumference equal to *one and one-third* the circumference of *one diameter*. In other words, their relative motion is again seen to be as *four* to *three* of *one* primary circumference.

"*Fourthly*. These bodies, which are revolving together, are known (by hypothesis) to be equal to one another in magnitude, and consequently equal to one another in all the elements concerned in their revolution. Now, let us suppose that their distance from each other equals *one*. That distance is seen to be the *side* of an equilateral tri- angle inscribed in the circle B, whose circumference they describe in one complete revolution. [See preceding fig- ure.] Now, the side of an equilateral triangle inscribed in a circle, equals the perpendicular from the base of an equi- lateral triangle, whose side equals the diameter of the afore- said circle ; and therefore, because the square of the side

of *any* equilateral triangle equals one-third added to the square of its perpendicular, and because the *square* of the side of the equilateral triangle inscribed in B equals *one*, therefore the square of the diameter of B equals *one and one-third*. Hence the area of B equals one and one-third the area of a circle whose diameter is *one*. Hence, in describing the circumference of B, the relative motion of these three revolving bodies shall be as *four* to *three*, or *one and one-third the area* of a circle whose diameter is *one*.

"By Proposition XII, Chapter II, it is shown that the true and primary ratio of circumference to diameter of all circles, which can be expressed in whole numbers, is *four times* the *area* of one circle *inscribed* in *one square* for the ratio of circumference, to the *area* of the *circumscribed square*, for a ratio of diameter. [See preceding figure.] Therefore, it is evident that if the circumference of B shall be resolved into such primary parts as shall express the circumference of *one* diameter in whole numbers, and in its exact relation to area and diameter, without a remainder in either, then the circumference of B shall equal *one* and *one-third* of one primary circumference, such as may be expressed in whole numbers; because the area of the square circumscribing B equals *one and one-third*, when the side of the equilateral triangle *inscribed in* B equals *one*.

"*Fifth*, and *lastly*. These revolving bodies must be supposed to revolve upon a value, in which diameter and area form exact and equal portions, and the only circle in nature whose diameter and area are equal to one another, and identical in numbers, is a circle whose circumference is *four;* hence the relative motion of three bodies of equal magnitude, revolving together, can not be otherwise than one and one-third of such parts.

"It is evident, from all the foregoing demonstrations, that, if we suppose the elements of which this problem is composed to be *magnitudes*, and take *them* as a standard of measure, whether such magnitudes shall be equal portions of the *area* of a circle, or of its *circumference*, or of

the *square* of its *diameter*, or whether we take as our standard of measure the *distance between* these revolving bodies, which makes the *side* of a triangle, or the *perpendicular* of such triangle, or its *inscribed circle*, in all cases, and in every case, the relative motion of these three revolving bodies *must be* as *four to three*, or *one and one-third* of *such magnitude as is made the standard of measure*, and there is no other standard of measure which can be mathematically assumed in the premises which I have not here considered.

" *The proposition is therefore demonstrated* that three gravitating bodies of *equal magnitude*, revolving together, their relative motion *shall be* as *four to three*, or *one and one-third* of *one primary circumference*.

" It will be obvious to any one that, in the foregoing demonstration, I have assumed that the *magnitudes* of the revolving bodies are all *equal* to *one another*, and hence their forces, distances, and velocities are all *equal to one another;* consequently, they all revolve on the same circumference, as shown in the several plates, from XXII to XXVI ; therefore, they can not revolve *about* each other, but must *follow each other* round a common center.   But, in the problem of the revolution of the moon about the earth, and the earth and moon together about the sun, the magnitudes are *all unequal*, and hence their distances from each other, their forces and velocities, are all *unequal*, and they are known *not to follow each other*, as in the foregoing demonstration, but to revolve about each other in the order above stated.

" It may perhaps, therefore, be inferred that the foregoing demonstration is not applicable to *such gravitating bodies.* But it must be observed, also, that the equalizing power of all the elements of the problem *are in full force and operation here*, as well as in the problem just solved, and that the chosen distances, forces, and velocities are in exact proportion to the relative magnitudes of the bodies revolving ; and hence their *relative* motion shall be *still the same*, with this difference only, that because the moon re-

volves about the earth, and the earth and the moon together
revolve about the sun, *therefore* their relative motions being
expressed by time (which is also relative), the following
proportions ensue."

(§ 12.) While Mr. Parker seeks to set forth his own
clearly conceived opinions that nature, in the construction
of the solar system, and of the cosmos, founds all bodies
as to their size, shape, density, motion, relation to each
other, and relative motion to each other, upon an *under-
lying law*, capable of mental realization and of geometrical
setting forth, by which, if some one unit fact of these phe-
nomena is known, then all these various elements may be
had in a correlating and co-ordinating method of notation,
he also intends to say that there is *one*, and *but one number
form*, for a flux through which all these relations may be-
come manifested and known.   The base of the law is the
relation of the geometrical elements of the triangle, the
circle, and the square ; the second, or measuring, or no-
tating, stage is the relation of the area and rectification of
the circle in terms of the square.   Now, these relations
may be variously set forth, as of unity for diameter to
$3.14159 +$ for circumference, and so on ; but there is but
one numerical form for the expression of these relations,
through which all these phenomena will correlatively work
themselves out, and that is in the Parker forms of 6561 :
$\overline{5153 \times 4} = 20612$, and *none other;* and this is the form on
which, under his quadrature value, and his problem of
three revolving bodies, Mr. Parker proceeds to the calcu-
lation of the time periods of the earth and the moon.

Suppose that nature herself recognizes the division of
the solar day into the same subdivisions that man does, viz.,
$5184000'''$ (or, in other words, suppose that man has been
taught these number relations from nature, as by revela-
tion, in what way soever we may understand it as coming),
as a *time circle* actually made by the revolution of a planet ;
and suppose she herself has so adjusted her works that
this circle *has relation* to the *abstract relation* of square
area to circular area and circular rectification in *one* pecu-

liar number form, *and none other*, so that she shall pre-
serve harmonious connection in all her works, between
geometrical principles of change and the power of trans-
lating or notating them through just *these number forms*,
and none other. The conclusion is irresistible that the
numerical methods, which we as mortals do possess, are,
after all, but the very ones which some unseen power has
been working by in the very creation of our cosmos, and
in some way has actually implanted in us for our use. The
test of this is in the application.   Mr. Parker has the right
of comparison of two distinct forms of circular use.   For
instance, a point on the equator performs a circle of time in
what we call 360 *degrees* of space, or 24 *hours* of time, or
5184000 *thirds* of last subdivisions of time.   Then 5184 is
the index of this work done and of a circular value accom-
plished.   Again, Mr. Parker finds that 5153 is *abstractly*
the area of a circle inscribed in a square of an area of
6561.   He has the right to institute whatever comparisons
he sees fit between these two relations, *because* of the com-
mon property which they have of being circular admeasure-
ments.   But this is but his right, and it does not follow that
nature has had any like weakness or any like strength of
design.   However, she has a measure of her own to mark
the same time period, which is in the rising and setting of
the sun *as a fact*, or in the alternations of day and night.
If Mr. Parker's uses are such that nature's use is seen ac-
curately to fit and adapt to them, then instead of speaking
of "*Mr. Parker's applications*," we can say and should say,
"*Nature's applications as discovered by Mr. Parker.*"

(§ 13.)   Mr. Parker takes the characteristic value
of a solar day as a circular admeasurement in its
division of   5184.

With this he claims that, in nature, the abstract
value of circular area is connected in mechanical
construction, which value is   5153.

As the one is the *solar day value in thirds*, so he makes
the second the *abstract circular value in thirds*, or like
denomination.   He says :

"The length of one 'circular day' is   5153000‴
"The length of one 'solar day' is   5184000‴
"The length of one 'sidereal day' is   5169846‴
    "The difference between one circular and one solar day
is 8′ 36″ 40‴ (or, it is 31–000‴, the differential 31 being a
number of great use).
    "The difference between one circular and one sidereal
day is 4′ 40″ 46‴."

His relation of area of square to that of inscribed circle
is :

                Area of square,   6561
                Area of inscribed circle, 5153

His relation of rectification is :

        Diameter of circle,   _____ 6561
        Circumference of circle,   5153×4 = 20612

. His general formula for the calculation of time periods,
under his "problem of three revolving bodies," is :

$$20612 \times \frac{4}{3} = 27482.666+, \text{ and this } \times \frac{4}{3} = 36643.555+,$$

in which the base is the area of the inscribed circle × by
4 = its rectification ; the second term is numerically the
value of the moon's lunation, and the third is the base of
the calculation of the solar year.   To illustrate what has
been said : Take the second term as the value of the moon's
lunation : numerically, it is the value of *abstract* circum-
ference, plus one-third of itself, and Mr. Parker says of it
that it is "the value of the moon's passage around the
earth *over* the value of one complete circle in space, in cir-
cular days ;" that is, it is in terms of the abstract value of
5153 and in its denominations, for it was raised from it.
Reduce this to solar time, thus :

$$27482666+ \times \frac{5153000}{5184000} = 273183220164+ :$$

Take this result as 27.3183220164+ solar days, and reduced
to the proper divisions of solar time, there results 27d. 7h.
38′ 23″ 1‴ 20⁗.   Now, this result is too small for a sidereal
lunation by the quantity 4′ 40″ 46‴, but strangely enough,
or rather magnificently enough, as proving all that has

been advanced, this quantity, as will be seen by reference to the differences above, is *just the difference between one circular and one sidereal day*, that difference being just 4' 40" 46'''. Thus there are the integral calculations : (1.) The Parker abstract form, raised by his problem of three revolving bodies, to a numerical value of a sidereal lunation, which, (2.) reduced to solar circular value, by the addition of the difference between the abstract circular value and the real sidereal value of a solar day, gives the real *mean lunation* in *natural periods of days*. There could be no stronger proof that in our resultant number forms of 360 degrees, 24 hours, and 5184000''', we have simply been making use of a system with which we have had *no hand or part in its invention*. It is to be observed that this result is *one-fifth of one second* in a lunar month, less than the period given in astronomical time. But let it be remembered that from the received astronomical value, it has been inferred that with regard to *ancient* astronomical time, the moon's motion has been accelerated, and this has given rise to the opinion that the solar system of movement is winding down, or closing up. By Mr. Parker's time, on this same ground, the moon's motion is shown to be equable and perfectly true to itself, going to show that the solar system is not a system *of projectiles*, but is a *permanency*, having a far more subtle and *life-like* cause of movement.

The third term of Mr. Parker's application of his problem of three revolving bodies, is 36643.555+, which he says is " the exact value of the earth's passage around the sun, over the value of one complete circle in space, in circular days ;" and on this he proceeds to the reduction to the exact period of the earth in solar time.

(§ 14.) His periods of time agree to a marvelously small fraction with the standard periods. The following tabulation shows this :

(1.) *A sidereal lunation.*

Astronomical time,	27d. 7h. 43' 4"
By Mr. Parker,	27d. 7h. 43' 3" 47''' 20''''

(2.) *A solar lunation.*

Astronomical time as usually given,	29d. 12h. 44′ 3″
By Mr. Parker,	29d. 12h. 44′ 2″ $\frac{84+}{100}$
The synodic period, as given by McKay, the English navigator,	29d. 12h. 44′ 2″ 48‴
By Mr. Parker,	29d. 12h. 44′ 2″ 50‴ 31⁗

(3.) *A mean year.*

Astronomical time, as given "thirty years since,"	365d. 5h. 48′ 49″
"By the latest authorities, as taken from a work of Dr. Dick,"	365d. 5h. 48′ 51″
By Mr. Parker,	365d. 5h. 48′ 50″ 53‴ 6⁗

(4.) *A solar year.*

Astronomical time,	365d. 5h. 48′ 6″
By Mr. Parker,	365d. 5h. 48′ 6″ 1‴ 6⁗

(§ 15.) These statements are given to exhibit the use made by Mr. Parker of his problem of three revolving bodies, based on his abstract circular values, and the use of the *factors* 4 and 3 in the formula

$$20612 \times \frac{4}{3} = 27482.66+, \text{ and this} \times \frac{4}{3} = 36643.55+ ;$$

the use of which factors will be shown to be very prominent in the pyramid works and measures.

And here, as in relation to his Quadrature, it is stated distinctly that the setting forth of the problems or claims of Mr. Parker are not in any way as affirming either his establishment of the Quadrature or of the problem of three revolving bodies. *It is absolutely necessary* to set forth the results of his labors, because it will be shown beyond all controversy that the construction of the great pyramid was

the *architectural display of his results;* and without the use of his conclusions and results, it will *forever* prove impossible to reconstruct that mass agreeably to the conception of the architect.

CHAPTER II.

SECTION I.

THE POSSIBILITY ON MR. PARKER'S FORMS OF RAISING A CO-ORDINATING UNIT OF MEASURE.

(§ 16.) Since the value of circumference of a circle, 20612, is so simply raised into measures of *time*, the question arises : Why would it not be feasible to found upon the same *datum a co-ordinating unit of measure* for other purposes? Take Mr. Parker's formulation :

$$\frac{20612}{1000} \times \frac{4}{3} = 27.48266+, \text{ and this} \times \frac{4 \times 10}{3} = 366.4355+,$$

which equals

$$20.612 \times \frac{4}{3} = 27.48266+, \text{ and this} \times \frac{4 \times 10}{3} = 366.4355+.$$

Here the first value is *an abstraction,* but the second term is the value of a moon's lunation, and the third term is the value of a year's period, in circular days reducible by observation to solar time : and here we have, as attached to the value of circumference *in integrals,* time measures in natural periods of days. Suppose it is attempted to raise from this source a unit for *linear, plane,* and *solid,* measure, in terms of these elements, so as to combine it with the *circular* and *time* measures. How to do it? Very simply. The natural unit for *linear* measure is anything which will serve as *unity.* That for *plane* and *solid* measures should correlate with *linear.* Take the geometrical figure of the

cube.' The *edge* of this solid is a *line*, and a line by which the *superficies* or *face* of the cube is measurable in terms of *area;* and the *face area* multiplied by the linear length, will give the *solidity.* Now, there are *twelve edges* to the *cube;* therefore, divide the above expression by 12, and there results

$$\frac{20.612}{12} \times \frac{4}{3} = \frac{27.4826+}{12}-, \text{ and this } \times \frac{40}{3} = \frac{366.4355}{12},$$

or,

$$1.71766+ \times \frac{4}{3} = \frac{27.48266}{12}, \text{ and this } \times \frac{40}{3} = \frac{366.4355}{12}:$$

that is, this *first term*, from whence spring these measures of lunar and solar time, by thus being, as it were, *cubed*, gives an additional *unit of measure*, for *linear*, *plane*, and *solid* measure. If to this first term, thus divided, some *practicable value for use* could be assigned, this remarkable co-ordinating *unit of measure* would be of the greatest value.

THIS POSSIBILITY, IN FACT, IS A REALITY—THE ANCIENT CUBIT AND BRITISH INCH.

(§ 17.) Providentially, this first term *has* a practicable value assigned to it, so that we are at no loss as to its recognition. For long, the attempt to arrive at the value of the ancient cubit measure has proved futile, except as to an approximate of what its real length was; that is, the *source of its derivation* has remained a mystery. Gathering some of the results as to the ascertainment of this cubit measure, in the *"Israelite,"* and in the *"Ancient of Days,"* the author says:

" The value of the ancient Egyptian cubit has been long sought, with results as follows :

" Cubit of Elephantine, 20.625 inches, or 1.7187 + feet.

"	Memphis,	20.47291 "	" 1.70607+	"
"	Turin,	20.57869 "	" 1.71489+	"
Another,		20.61806 "	" 1.71817+	"
"		20.65843 "	" 1.72153+	"

Another (Karnak),   20.650 inches, or 1.7208 + feet.
  " Sir Isaac Newton, 20.604   "   " 1.717 + "

The most important, as \
 ascertained by Seyf- \
 farth, on the meas- } 20.61113988, " 1.71759+ "
 ures of the French /
 Expedition of 1799, /

 " These results have been accurately taken from different authors. Their nearness to the truth is sufficient to show that the perfect determination of this cubit value has been obtained to within a very narrow limit; in fact, so narrow that but little hopes of further correction can reasonably be entertained, unless the very elemental principle whence the cubit numerical value was derived be, in some way, stumbled on.

 (§ 18.) " Before proceeding to show whence the derivation of the cubit, it may be well to explain why it is stated that the measure of Seyffarth is noted as the most important. Seyffarth was appointed to succeed to and to continue the labors of Spohn in the effort to solve the question of translation of the Egyptian hieroglyphics. At Turin, in the museum, he found a papyrus scroll containing the ground plans and *dimensions* of the *chambers*, *passageways*, etc., of the *catacombs of Osimandya*, in Egypt, as to the *lengths*, *breadths*, and *heights* thereof, in the terms of *cubits* and *parts of cubits*. It seems that the French expedition of '99 had, with great care, taken these very measures. A comparison of one with the other was made, and there resulted a value of the cubit as .523524 of the French *meter*. One meter = 39.37 *inches* English; and the reduction gives 20.61113988 British inches as the resultant value. The importance is that this is derived from a *great number* of comparative measures, just as Sir Isaac Newton's was derived from *many* comparative measures taken by Professor Greaves from the passage-ways and chambers of the great pyramid of Jizeh. As to this value, Professor Seyffarth himself says:

 " ' There are at present several Egyptian cubit measures in

Europe which agree with each other in length and divisions. It was, however, to be decided whether those ells were typical imitations or real instruments of measuring. This question was answered by the said ground plans at Turin, as has been demonstrated, with reference to the Hebrew cubits, in my "Alphabeta Ægyptiacum, Persarum," etc., Lipsiae, 1840, p. 140. This work forms the sixth part of my " Beitraege zur Kenntniss," of which a copy is to be found in the Astor library. The Egyptian cubit, being divided into 2 feet, 7 palmi, 28 inches, and several smaller parts of an inch, measures 0 523524 meters, i. e., nearly 21 inches English.'

" Take the expression given above :

$$1.71766 \times \frac{4}{3} = \frac{27.48266}{12} +, \text{ and this} \times \frac{40}{3} = \frac{366.4355}{12} +,$$

and here in that very first term, which is *a cubing of the value of circumference*, or $\frac{20.612}{12}$, to raise a co-ordinating unit of measure, this ancient cubit value of the Egyptians is to be found, with the natural reasons for its derivation. With it compare

Value of Sir Isaac Newton,   1.717 feet.
Value of Professor Seyffarth,   1.71759 + feet.

Obviously, then, we have as a *practical fact* that the first term of this expression *is* the value of the *ancient cubit* in terms of the *English foot* measure. As obviously, the expression from whence this was derived was of the value of the *British inch, because* it was 20612÷12, the reduction by 1000 being made to make it co-ordinate with a natural measure of time, as stated.

"*Hence, then, we really and truly have in the British foot and inch measures the identical derivations from the elements, and they turn out to be units of measure for circular, linear, plane, solid, and time values.*"

(§ 19.) Thus, in discovering that *there is* a practicable value to this unit of measure, co-ordinating so many different kinds of measure, ordinarily taken to be diverse and distinct from each other, in the Egyptian cubit value, it appears that *the original value* whence this cubit, or cubiting, was taken, was itself utilized, as in British inches,

making it to appear that the British measures were *prior in rank* to all others. The further close and intimate connection of these kinds of measure creates the impression that (1) the British system of measures rests upon this same quadrature of the circle, and (2) that the British system *of long and land measures is purposely framed to answer at the same time to time measures*, showing an extension of the idea herein so strangely raised. Therefore, it is not out of place to assert that an examination into the structure of the British system of these measures may serve to shed light on the whole subject, and to help the mind to a partially better conception of the workings of the system. This examination is to be found in Section III of this chapter.

SECTION II.

THE ANSATED CROSS OF THE EGYPTIANS AND THE CHRISTIAN CROSS THE EMBLEMATIC DISPLAY OF THE ORIGIN OF MEASURES.

(§ 20.) If it is desired to display the process of the establishment of the co-ordinating unit of measure spoken of, by way of symbol, it would be by *the figure of the cube unfolded, in connection with the circle, whose measure is taken off onto the edges of the cube.* The cube unfolded becomes, in superficial display, a *cross proper*, or of the *tau* form, and the attachment of the circle to this last gives the *ansated cross* of the Egyptians, with its obvious meaning of the *origin of measures*. Because, also, this kind of measure was made to co-ordinate with the idea of the *origin of human life*, it was secondarily made to assume the type of the pudenda hermaphrodite, and, in fact, it is placed by representation to cover this part of the human person in the Hindu form. It is very observable that, while there are but 6 faces to a cube, the representation of the cross as the cube unfolded, as to the cross-bars, displays

one face of the cube *as common to two bars*, counted as belonging to either ; then, while the faces originally represented are but 6, the use of the two bars counts the square as 4 for the upright and 3 for the cross-bar, making 7 in all. Here we have the famous 4 and 3 and 7. The four and three are the factor numbers of the Parker problem. But, what is very much to the purpose here, is, that the *golden candlestick* in the temple was so composed that, counting on either side, there were *four* candle-sockets ; while, at the apex, there being *one in common* to both sides, there were in fact 3 to be counted on one side and 4 on the other, making in all the number 7, upon the selfsame idea of one in common with the cross display. Take a line of one unit in breadth by 3 units long, and place it on an incline ; take another of 4 units long, and lean it upon this one, from an opposite incline, making the top unit of the 4 in length the corner or apex of a triangle. This is the display of the candlestick. Now, take away the line of 3 units in length, and *cross it* on the one of 4 units in length, and the cross form results. The same idea is conveyed in the six days of the week in Genesis, crowned by the seventh, which was used by itself as a base of circular measure.

(§ 21.) On page 6 of the Introduction, and in § 3 of the text, it is noticed that with the Hebrews and in the pyramid—and this will be shown hereafter more fully—the form of 113 to 355 is closely allied to, and intimately connected with, the Parker form of 6561 to 20612. It is so in the working out of astronomical and other problems, and in giving one great symbol value to the Hebrew godword *Jehovah*. As seen, the symbol of the origin of measures, from whence the idea of the origin of all things took its rise, in the number form, is *the cross*. In Hebrew, the, or one of the, word forms for "*man*" is שיא, or *aish*. The value of this word is, adding the values of the letters, 311, or, reading the characteristics of the values as the word reads, 113—the very diameter value in question. The circumference value to this, or 355, is to be found in the

Hebrew word for a *lunar year*, or שנה, or *shānāh*, thus directly connecting the idea of "*man*" with an astronomical value, as also an abstract circular value.   As said, the two values of 113 to 355 and 6561 to 20612 are, as it were, *welded* together in the ancient use.   The attachment of a man to the cross would be, in display, the symbol of such welding.   In fact, this is a plainer and more perfect symbolization of the ancient use than any other.   It was one made use of in this form of display by the Hindus.   In fact, the Old Testament is rabbinically and kabbalistically familiar with the expression of crucifying a man, or men, before the Lord and *the sun*.   In symbol, the nails of the cross have for the shape of the heads thereof a solid pyramid, and a tapering square obeliscal shaft, or phallic emblem, for the nail.   Taking the position of the *three* nails in the man's extremities, and on the cross they form or mark a *triangle* in shape, one nail being at each corner of the triangle.   The wounds, or *stigmata*, in the extremities are necessarily *four*, designative of the *square;* and, as in the candlestick, there have been two used as one, or rather one used as two, in the connection of the *three* nails with the *four* extremities.   The three nails with the three wounds are in number 6, which denotes the 6 faces of the cube *unfolded*, on which the man is placed ; and this in turn points to the circular measure transferred onto the edges of the cube.   The *one* wound of the feet separates into *two* when the feet are separated, making *three* together *for all*, and *four when separated*, or 7 in all—another and *most holy feminine* base number.

(§ 22.)   The man's head is the symbol of the *sphere*, or *circle;* but this has been enforced by the use of a *crown* upon it, of a *circle* of light about it, or of a *nimbus* or *glory* radiating from it.   In Hebrew, the word for *head* is ראש, or *rāsh*, and reads 213.   The Hebrew, so far as the author can discover, had no expression for a cipher or nought, but understood it or not, as needed.   Now, 213 equals $355 \times 6 = 213$-0, and this circumference value, as that of the *head of the man*, is in fact used to denote the

subdivision of the circumference of 355 by 6 diameters crossing, thus making the circle subdivided into 12 compartments. This is to be found in the first line of Genesis, and in the picture of the flood.

(§ 23.) These are symbols of ancient use of the Parker forms and their connections. It serves but to confirm this use to notice the conclusion to which Professor Seyffarth arrived from the study of the Egyptian hieroglyphic signification of the ansated cross. It will be observed that this cross, being surmounted by the circle, or circular figure, in fact roughly represents the form of a man, with arms extended. Professor Seyffarth says :

"It represents, as I now believe, the scull with the brains, the seat of the soul, and with the nerves extending to the spine, back, and eyes or ears. For the Tanis stone translates it repeatedly by *anthropos* (man), and this very word is alphabetically written (Egyptian) *ank*. Hence we have the Coptic *ank, vita,* properly *anima*, which corresponds with the Hebrew אֱנוֹשׁ, *anosh*, properly meaning *anima*. This אֱנוֹשׁ is the primitive אָנוֹךְ for אָנֹכִי (the personal pronoun I). The Egyptian *Anki* signifies *my soul.*"

It is curious that this Hebrew equivalent, *Anosh*, for "*man*," by Mr. Seyffarth, reads numerically 365—1, which could be intended to mean either $\overline{365+1}=366$, or $\overline{365-1}=$ 364, or the time phases of the solar year, thus shadowing forth the astronomical connection.
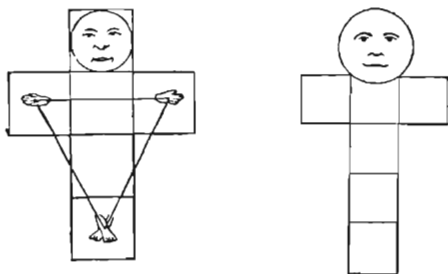
PRIMORDIAL VESTIGES OF THESE SYMBOLS.

Under the general view taken of the nature of the number forms of Mr. Parker, it becomes a matter of research of the utmost interest as to when and where their existence and their use first became known. Has it been a matter of revelation in what we know as the historic age—a cycle exceedingly modern when the age of the human race is contemplated? It seems, in fact, as to the date of its possession by man, to have been further removed, in the past, from the old Egyptians than are the old Egyptians from us.

THE EASTER ISLES.

(§ 24.)   (1.) The Easter Isles in "*mid Pacific*" present the feature of the remaining peaks of the mountains of a submerged continent, for the reason that these peaks are thickly studded with cyclopean statues, remnants of the civilization of a dense and cultivated people, who must have of necessity occupied a widely extended area. On the backs of these images is to be found the "*ansated cross*," and the same modified to the outlines of the human form. A full description, with plate showing the land, with the thickly planted statues, also with copies of the images, is to be found in the January number, 1870, of the "*London Builder*." The statues exhibiting the markings of the cross, it is thought, are in the *British Museum*.

CRUCIFIED MAN IN SOUTH AMERICA.

(2.) In the "*Naturalist*," published at Salem, Massachusetts, in one of the early numbers (about 36), is to be found a description of some very ancient and curious carvings on the crest walls of the mountains of South America, older by far, it is averred, than the races now living. The strangeness of these tracings is in that they exhibit the outlines of a man stretched out on a cross, by a series of drawings, by which from the form of a *man* that of a *cross* springs, but so done that the cross may be taken as the man, or the man as the cross; thus exhibiting a symbolic display of the interdependency of the forms set forth in the text.

HEBREW INSCRIPTIONS IN THE AMERICAN MOUNDS.

(3.) A few years since, a man by the name of Wyrick, a persistent delver in the squares and circles of the "*mound-builders*," at Newark, Ohio, discovered two stones, covered with old Hebrew inscriptions. He had borne a very good character ; was a simple, unlearned, and, by reputation, truthful man. Shortly prior to his finding these relics in the clay of a kind of·well or water hole, in one corner of one of the inclosures, he had been in the State of Pennsylvania, and it has been supposed that he obtained these relics there, and afterward pretended to find them in the mounds. As to the relics themselves, they were pronounced upon by competent judges as being of great antiquity, and certainly were made at the expense of very much labor, skill, and learning. While, by common consent, Mr. Wyrick held the reputation of being simple and truthful, the seeming impossibility of his alleged discovery made his reputation for truthfulness, in the estimation of some, kick the beam ; and so, by some, his *find* was put down as *doubtful*, by sheer necessity of the case.

CURIOUS DATA REGARDING THE MOUNDS AS ALIKE TYPHONIC
    EMBLEMS WITH THE PYRAMID OF EGYPT AND WITH HEBREW
    SYMBOLS.

(4.) Now, as sustaining his veracity, it is to be seen that there is this very curious combination of data, with respect to these mounds : The mounds are monumented circles and squares, or relations of circular and right line measure. To these the Egyptians and the Hebrews alike, were addicted, in the workings of their highest religious cultus. Both the Egyptians and Hebrews seem to have derived their knowledge from the common source of the Phenician. The great pyramid monumenting this cultus, stands on the *west* bank of the Nile, the side of *sepulture*. The books of the Egyptians containing this knowledge, were called the *books of the dead*. The name of

Moses, the author of the Hebrew books containing this knowledge, was the equivalent of Thot, or Hermes, the lord of the lower realms, or of the dead, who, also, was esteemed the teacher of wisdom.   Now, one form of the lord of the descendant, he who held the gates of death, was Typhon ; and he was lord of sepulture, and his great Egyptian representative was the *crocodile*, or *alligator*, as his Hebrew and Egyptian representative was that of the *swine* or *hog;* exemplified in the Christian books by the devil leaving the man and passing into the herd of swine, which thereupon rushed into the sea, another emblem of Typhon.   Near the Newark mounds of circles, and squares, or rectilinear figures, is a high hill overlooking them, and it is stated that on this hill is a monstrous mound, *built to monument the shape of an alligator or crocodile*, apparently located as lord paramount over the works below.

The authority for this interesting crocodile mound is as follows, quoting from a letter of description : " The alligator of which I spoke to you, I have seen a great many times ; is on the farm adjoining my father's ; is, as I recollect it, from 75 to 100 feet in length, and properly proportioned as to breadth, length, and size of legs, tail, body, and head ; is distinctly preserved and easily traced ; looks, as I recollect, to the east, and most of the ancient works in that vicinity are in an easterly direction from that point, and when the forests are cleared away, in sight of the alligator, which is on the *highest point* in that vicinity."   This description is by a very prominent and well-known public man of the State of Ohio.

In the city of Marietta, Ohio, is to be found some fine remains of the " *mound-builders.*"   There is a truncated cone surrounded by an elliptical embankment.   On one side this embankment is cut through, leaving a passage-way leading on to a causeway, raised above the general level of the ground, and extending a distance of about 1,000 feet to the side of a square.   Half-way across this distance, and on the general level of the ground, a fire had been made, and gifts offered, probably at the dedication of the works.

The most remarkable one was a mass of pure native silver of four pounds weight, lying on charcoal remains of the fire in which it had been smelted. This metal, in its pure condition, could only have been procured from Lake Superior. It has been noticed by those conversant with the mounds, that the gifts (of dedication) are as follows : Discs of *mica slate* from the *east* of the Alleghanies, and *shells* from the Gulf of Mexico, or from the *south*. Here was silver from the *north*. The *west* was seemingly not represented, as likewise was the case with the Egyptians and Hebrews, *because* the west signified the Typhonic portals into another condition of existence, from whence no gift could be brought.

MOUNDS SHOWING BRITISH MEASURES.

(6.) In searching in the works of Squier and Davis, a great number of measures of the mounds were found, and it was very observable that the English measures seemed so fitting, that it was difficult to free the mind from dwelling upon their use in the original construction. These measures seemed to be multiples of 3, 4, 6, and 12, and kept running toward the value 360. These facts were noted at the time as curious ; but any possible connection seemed, even as it does now, but a wild freak of the imagination, and the matter, though noted, was dropped.

AZTEC OR "*mound-builder*" PYRAMID, SHOWING THE USE OF THE VALUE 318, OR DIAMETER TO A CIRCUMFERENCE OF *one*, AS A CIVIL CALENDAR NUMBER.

(7.) It is known that tradition among the Aztecs has handed down a very perfect account of the *deluge of Noah*. Baron Humboldt says that we are to look for the country of Aztalan, the original country of the Aztecs, as high up, at least, as the 42d parallel north ; whence journeying, they at last arrived in the vale of Mexico. In that vale the earthen mounds of the far north become the elegant stone pyramidal, and other structures, whose remains are now found. The correspondence between the Aztec remains

and those of the Egyptians is well known.   As to the ancient works, Atwater, from examination of hundreds of them, is convinced that their authors had a knowledge of astronomy.   As to one of the most perfect of the pyramidal structures among the Aztecs, Humboldt gives a description to the following effect :

"The form of this pyramid (of Papantla), which has *seven* stories, is more tapering than any other monument of this kind yet discovered, but its height is not remarkable, being but 57 feet, its base but 25 feet on each side.   However, it is remarkable on one account : it is built entirely of hewn stones, of an extraordinary size, and very beautifully shaped.   *Three* staircases lead to the top, the steps of which were decorated with hieroglyphical sculptures and small *niches*, arranged with great symmetry. The number of these niches seems to allude to *the* 318 *simple and compound signs of the days of their civil calendar.*"

318 is the Gnostic value of Christ, and the famous number of the trained or circumcised servants of Abram. When it is considered that 318 is an *abstract value*, and *universal* as expressive of a diameter value to a circumference of *unity*, its use in the composition of a civil calendar becomes manifest.   It was in Hebrew use.

OLD BRONZE AXES OF THE PHENICIANS, IDENTICAL IN SHAPE WITH THE COPPER ONES OF THE MOUND-BUILDERS.

(8.)   General Cesnola, on the hillside of Idalium, in the island of Cyprus, exhumed an early Grecian or Pelasgic necropolis, which was three feet below the surface. At the depth of six and a half feet below this, a still more ancient necropolis of the old Phenicians was found, from which a vast collection of their remains was made. The metal instruments found were of bronze, or an admixture of tin with copper.   Among these, is to be seen, in this collection, in 14th street, New York, the style of shape of the axes used at that time.   Larger and smaller, they are of the same peculiar shape, being solid, without any hole for a handle.   They are *identically the same* with the copper axes to be found in the " *mound-builders*' " remains. These copper axes must have been useless, because of their

softness; and, on this continent, there was no tin found for admixture.   It may have been that there was relationship of race and nation, and these useless articles were made as mementos of the actual ones, which were, in another part of the world, useful from the admixture of another metal. The same style of axes is to be seen in a Boston collection, either of Egyptian or early Greek.

The above series of facts seem to be interesting and worthy of recital in the connection made ; but conclusions from them, as touching relation between the Egyptians and Hebrews and Phenicians with the " *mound-builders*," or as touching the primordial use of the Parker forms, and the symbols of their use, are left to the reader.

SECTION III.

BRITISH LONG AND LAND MEASURES, INCLUSIVE OF AN OCCULT
SYSTEM OF CO-ORDINATING TIME MEASURES.

(§ 25.) (1.) It is found that the great pyramid can be re-constructed from a *standard* base of measures (the Parker elements of diameter to circumference values of a perfect circle, viz., 6561 to 20612 *in inches*), so that by a *purposed* variation on the standard, the result is an answer to, or is in correspondence with, actual British measures of that structure ; evidently to the intent of the architect.   (2.) It is found that this value of circumference, divided by 1000 and by 12, or, $\dfrac{20.612}{12}$, is just the value 1.71766 + of the ancient Egyptian or sacred *cubit*, in terms of the British foot measure.   (3.) It is found that by the proportion

20612 : 6561 :: 1 : .31830972249 +,

there results a diameter of 318 + to a circumference of 1 ; which 318 is the *Gnostic* value of *the Christ*, and is made use of for this meaning of diameter, in the 318 trained or circumcised servants of Abraham.   It is also found that this value, thus arising, is, in fact, made great use of in the

pyramid, in the *formulæ* 3.18309+ × 6 = 19.0985+, and
190.985+ × 2 = 381.970+; the first result being the hight
of the king's chamber, and the second being the half base
side of that structure. (4.) It is found that the means of
reconstruction of that mass is that value of the Parker el-
ements, which, from his problem of three revolving bodies,
gives the value of *a lunation*, and of the *year period*, in
circular time measure; that is, the values used are

$$20612 \times \frac{4^2}{3^2} = 36643.55+, \text{ and this} \div 100 = 366.4355+;$$

which result is, as Mr. Parker says, "the exact value of
the earth's passage around the sun, over one complete circle
in space, in circular days." (For the full formula, see §
13, p. 43.) And, in fact, the *standard* measure of the cir-
cumference of the base of the pyramid is 36643.55+ *inches*.

(§ 26.) (*a*.) It is found (§ 57), by certain values taken
of the earth's diameters, that the *difference* between their
lengths in *British miles*, multiplied by this value of
366.4355+, gives the earth's equatorial diameter *in miles;*
that is,

(1.) 21.6325+ miles × 366.4355+ = 7926.9269+ miles.

The same difference, multiplied by the same value, *less
one*, gives the other diameter *taken*, thus:

(2.) 21.6325+ miles× 365.4355+ = 7905.2943 miles; a
value *greater* than the *polar*, and *less* than the *equatorial*
diameter.

(*b*.) It is found that this difference, stated in miles, is it-
self also a derivative from an approximate *year time* value
in *days*, and partly derivable in the same manner. An es-
timate back will clearly show the derivation, thus:

$$(1.) \; 21.6325+ \times \left(\frac{3^3}{4^2} \times 10\right) = 365.04894+.$$

It will be observed that the same process is used as in
§ 25 (4), with the same factors, save in the reverse; and
that here 3^3 is used in place of 3^2. Reverse this process,
thus:

$$(2.) \; 365.04894+ \div \left(10 \times \frac{4^2}{3^3}\right) = 21.6325+ \text{ miles.}$$

Substitute this value in (a.) (1.), and, by formulating, there results,

$$(3.)\quad \frac{366.4355 + \times\ 365.04894}{10} + \times \frac{4^2}{3^3} = 7926.9269 + \text{ miles,}$$

or, the *equatorial* diameter of the earth :

$$(4.)\quad \frac{365.4355 + \times\ 365.04894 +}{10} \times \frac{4^2}{3^3} = 7905.2943 + \text{ miles.}$$

or, the *other* diameter *taken*.

(Attention is directed to the use of the factors 4 and 3, as from Mr. Parker's problem of three revolving bodies. Notice, also, that the equivalent of 144, as the inches in the square foot is $4^2 \times 3^2$.)

(§ 27.) It is found that (4.), in § 26 (b.), is the same as to

$$(1.)\quad 365.4355 + \times\ 365.04894,$$

as the *square of the mean* of these values. Substituting this equivalent expression of the square of the *mean* in that formulation, (4.), and there results :

$$(2.)\quad \frac{365.24225^2}{10} \times \frac{4^2}{3^3} = 7905.2943 \text{ miles,}$$

where *the multiplicand* is found to be *the mean solar year value*.

Wherefore, it is seen that the miles diameter value *taken* is obtainable directly, and the miles *equatorial* value of diameter is obtainable indirectly, through the square of the *mean solar year value*. With these and additional data, as of the *true* solar year value, the *polar* diameter of the earth is to be had. [§ 57 (d.) (4.) and (5.)]

(§ 28.) The chiefest value in the construction of the pyramid is 216330, taken, first, as an elliptical property, or difference of diameters, and was evidently intended as the numerical value of the difference of certain ones of the earth's diameters, as 21.6330 miles, for the purpose of ob-taining others.

(§ 29.) The consideration of the foregoing carries with it the *impression* that (1) there is a relation between *time* and *British mile* values, in nature's construction of the earth, so that (2) the *material extension* of the earth in *miles* is in a kind of co-ordinate relation with its *time* measure about the sun, and *vice versa*. So it is well to ascer-

tain what, if any, relation exists between *time* and *distance*, or *area* values, in the *British measures themselves*. If such a relation does exist in them, and is discoverable, so as to be recognizable, it certainly will serve to strengthen the impression mentioned.

(§ 30.) That which attracts attention as to the make-up of the British *long* and *land* measures is, that after the denomination *yards*, or "*three feet make one yard*," the next enlargement is not continued in *whole*, but in *fractional* values ; as, " 5½ *yards make one rod*," or, " 30¼ *square yards make one square rod*." Continuing on, it does not say that 40 *square rods* make one *square rood;* then, that 4 *square roods* make one *square acre;* then, that 640 *square acres* make one *square mile.* It runs, " 40 *square rods make one rood*," " 4 *roods make one acre*," and " 640 *acres make one square mile*," where the measures terminate.   If a *special* or *occult* (i. e., one beyond the ostensible purport) measure can be shown to run through the grades of these measures, having in view some definite terminus, which attained to, shall co-ordinate two separate *kinds* of measure, then the *principle*, or such a principle, of the structure of these British measures, and enlargements thereof, may be inferred.   It is thought that this can be shown.

(*a.*) 144 square inches = 1 square foot. This gives a square of 12 divisions to the side. ($4^2 \times 3^2 = 144$, so that 16 blocks of 3 inches to the face, or 9 blocks of 4 inches to the face, fills the square.) Divide this square into 4 squares ; each will contain $\overline{6 \times 6}$, or 36 square inches, and $36 \times 4 =$ 144. By this division, the unit taken is a block of $\overline{6 \times 6}$ = 36 square inches, 4 of which is a square foot. This is the favorite subdivision among the ancients, and the basic square, capable of subdivision again into blocks of $\overline{3 \times 3}$ = 9. Therefore, *take as the base 6 blocks in length of* 1 *square inch each.* This use is to be found in the beginning of Genesis. (*Kabbalistically*, the measure of the earth is represented as in alternate *black* and *white* squares, the white signifying *male*, and the black *female*.)

(*b.*) $\overline{36 \times 36}$ square inches $= 1$ *square yard.* 36×36 $= 1296$, or 6 rows of 36×6, or $216 \times 6 = 1296$.

Now, 4 square yards $= 1296 \times 4 = 5184$, and this is a *time* measure, for

$$
\begin{array}{lll}
\text{One solar day has in } \textit{hours}, & 24 \\
24 \times 60' \text{ equals in } \textit{minutes}, & 1440' \\
1440' \times 60'' \quad \text{``} \quad \text{`` } \textit{seconds}, & 86400'' \\
86400'' \times 60''' \quad \text{``} \quad \text{`` } \textit{thirds}, & 5184000'''
\end{array}
$$

the *characteristic* values being, respectively, 24, 144, 864, and 5184, numerically ; whereby it is seen that the perfect square of 36 inches to the side, or the area of *one yard*, multiplied by 4, $= 5184$ square inches, is, in *time* value, the $\frac{1}{1000}$, in *thirds*, of *one solar day.*

(*c.*) Find, if possible, some condition of the British measures, into which this value of one solar day will evenly divide.

(1.) 1 *rod* $= 198$ inches to the face, or $198^2 = 39204$ square inches in *area.* 5184 will not evenly divide in this.

(2.) 40 rods $= 1$ *furlong* in length, and 1 *rood* in area, and $\overline{40 \times 39204} = 1568160$ square inches in area. 5184 will not evenly divide in this.

(3.) 4 roods make *one acre*, and $\overline{1568160 \times 4} = 6272640$ square inches in area. 5184 *divides evenly in this* 1210 *times.*

(§ 31.) The block used has been $\overline{6 \times 6}$, of 36 square inches, or 6 times the unit row taken, $= \overline{6 \times 1 \times 6}$; and the length of 160 rods, or 40×4, or *one acre*, is just 5280 of these blocks in length by 33 of them in breadth ; showing that that condition which is a *perfect multiple* of 5184, or of $6^4 \times 4$, or of the $\frac{1}{1000}$ part of *one solar day*, is arrived at, when we have a linear length in land measure, in blocks of 36 square inches each, or of $\overline{6 \times 6}$, of 5280 *numerically the mile value.*

One rod face by 160 rods deep is, in depth, one half of one mile, and 320 such blocks, placed together, make *one*

mile in length. For the ordinary uses of these measures, the *unit measure* taken to begin with was a block of 12 inches to the face, and 144 square inches in area; *doubling* the above, or $\overline{160 \times 2}$, will, at the same time, preserve the above measure of *time*, in terms of blocks of $\overline{6 \times 6}$, or 36 square inches each, and will also give the same numerical value, viz., 5280, in blocks of $\overline{12 \times 12}$, or of 144 square inches.

(§ 32.) So, it is seen that the value of *the mile* length of $\overline{5280 \times 33}$, in blocks of $\overline{6 \times 6}$, *the mile being the terminal stage of the table of measures*, is just that one which gives the *first value into which the solar day value will evenly divide*. This is very noteworthy, when taken in connection with the facts and formulations hereinbefore set forth, *where the solar year value, in terms of solar days, produces the values of the earth's diameters in terms of British miles.*

(§ 33.) (*a.*) One acre, then, is 5280 blocks of $\overline{6 \times 6}$, or 36 square inches in area, in length, or the numerical value of the *mile length* in terms of blocks of $\overline{12 \times 12}$, or 144 square inches in area. And it is the first *stop* or *rest*, where the solar day value of 5184 evenly divides in square inches.

Note that, in Hebrew, *stop* or *rest* (equals also a *support* or *base*, as *of a system*, applicable variously) is *Noah*, or נֹחַ, and our word Inch, literally changed into the Hebrew, is יׄנֹחַ or I-nch, the meaning of which is *Jah*, or *Jehovah is Noah;* and as the term Jehovah, for one of its meanings, is a *unit straight one of a perfect circular denomination* (§ 82, *b*), Noah, by the copula, is designative of some *unit foundation* or *base*.

(*b.*) 518400‴, or one solar day, ÷ by 60‴ = 86400″. The square yard contains 6 blocks of 6 inches each to the face, or, in area $\overline{36 \times 36}$. One-sixth ($\frac{1}{6}$) of the square yard is a block of $36 \times 6 = 216$ square inches. $216 \times 4 = 864$ square inches; therefore, 864 is $\frac{4}{6}$ of one square yard, and is the $\frac{1}{100}$ of *one solar day*, in *seconds*.

Thus, it is seen that the square yard seems to be just that *purposed* unit condition, such that 4 even units, or one

enlarged square block of four even square yards, gives this solar day number 5184; hence, it would seem to be the source of the co-ordination of two sets of different kinds of measure; and *as it originates the solar day, it may be said to be the parent of the solar year, numerically.*

Note that, in Hebrew, *Jared*, the father of Enoch, is construed to be " *the mount of descent*," and is said to be the same with *Ararat*, on which the cubical structure of *Noah*, or *foundation measure*, rested. *Jared*, in Hebrew, is יֶרֶד. The root derivations are the same with those of *Ararat*, of *acre*, of *earth*.* The Hebrew יֶרֶד is *literally*, *in British*, Y R D; hence, in *Jared*, is to be found, *literally*, our English word *yard* (and also יֶרֶד, for *Jah*, or *Jehovah, is rod*). It is noteworthy the son of *Jared*, viz., *Enoch*, lived 365 years; and it is said of him, by rabbinical commentators, that the year period of 365 days was discovered by him, thus bringing, again, *time* and *distance* values together, i. e., *year time* descended, by co-ordination, through the *yard*, or *Jared*, who *thus was its father*, in or through *Enoch;* and, truly enough, $1296 = yard$ (or *Jared*) $\times 4 = 5184$, the characteristic value of the solar day, in *thirds*, which, as stated, may be styled the *parent, numerically*, of the solar year.

* The Hebrew is noted for its word stem-building. The methods of stem changes, to form organic changes, are very interesting, though now not accurately known. "*Ararat = the mount of descent* = הָר-יֶרֶד, *Hor-Jared*. Hatho mentions it out of composition by *Arath* = אָרַת. Editor of Moses Cherenensis says : ' By this, they say, is signified *the first place of descent* (of the ark).' " (Bryant's Anal., Vol. IV., pages 5, 6, 15). Under "*Berge*," *mountain*, Nork says of *Ararat :* " אָרְרַט, for אָרַת (i. e., *Ararat* for *Arath*), *earth, Aramaic* reduplication." Here it is seen that Nork and Hatho make use of the same equivalent, in Arath, אָרַת, with the meaning of *earth*. Take the word אָרַד = *arad, to proceed from, to be descended from*, which is but a form of יֶרֶד, or *Jared*. Consider that ד, ט, and ת are interchangeable, and אָרַת, *arath*, אָרַד, *arad*, and אָרַט, *arat*, are cognate from a common source. Reduplicate, and we have, for אָרַט, *arat*, אָרְרַט, or Ararat. Consider that ת is interchangeable with צ and שׂ, and אָרַת, *arath*, becomes אָרֶץ, *arets*, the Hebrew word for *earth*. The Egyptian word for *acre*,

an *earth measure*, is *ar-ou-ar*, in which there is a simple redu-
plication of אר, *ar*. "אר = *ar*, is a stem having the funda-
mental signification of *ground, earth, soil;* hence, *furrowing*
or *ploughing, harrowing* or *vexing.*" (To be found to this
effect in " *Origin and Destiny of Man.*") Hence, taking
the אר, *ar*, as a stem, we have, in *vexing* or *furrowing*, a base
for the word ארר, *arar, to curse*, used in Genesis. Chang-
ing ארץ, *arets*, to חרץ, *charets*, we have *to divide, separate*,
to engrave; and in חרש, *charash, to plough, harrow, vex.*
Now, Fuerst says that ארד, *arad*, is but a form of ירד, *Jared*,
the word in question, the א and י " frequently running into each
other." The idea is *descent from*, as a *source*, also *flowing from*,
for the word, with suffix, is also *a river*. It will be shown that
the word ארץ, *arets, earth*, is really a very great *god-word*, ex-
pressive, with *Adam*, אדם, in the *hifil* participle of this word,
as a verbal, of the first great abstract hermaphrodite source of
production, or *generation*, or *birth*, or *flowing from*, under the
titles *Arts, Artes*, and *Mādim*, for *Mars:* hence *Arets
earth*, is a term of *birth* or *descent*, or *of flowing from*, with
Jared and *Ararat*, while all have reference to *earth* as a *source
of birth* as well as a mere reality. The development under the
Mars form works out the idea of *generation*, as applied also to
the growth of civilization—i. e., as a source of *ploughing, plant-
ing, building, measures*, etc. ; in short, of all that comes under
the generalizing *English-Hebrew* and *English-Egyptian* word
Arts. So, cognately, *Jared* or *Yard*, as source or descent of
earth measure, is but a form of *Aretz*, and of *Ararat.* All this
seems to fasten the chief stem, from whence the cognate ideas
are derived, in the radical stem אר, *ar*, with suffixes, and changes
to vary the original idea. In fact, Fuerst says, under ארר, *arar*,
to curse, " The stem is אר, and, in further developments, has
also the harder sound, and so the root חרא, *chārā, to separate,
sever.*" So, it is thus seen that the words *Jared, Ararat, aroura,
arour, cursing, arets, earth*, may all be cognate forms under the
radical אר, *ar*. It is to be observed that the *numerical value* of
the word Jared, or *Yard*, is taken, not, as usual, from any such
value appearing in *the word*, but from it as a concealed word for
that measure here given ; *because* of its most curious connections
in relation to measures, and *because* that it gives us the very
English word name (*yard*) under which the very measure fitting
in these very connections is numerically to be found.

(*c.*) $86400'' \div 60'' = 1440'$. The square foot contains 144 square inches. Therefore, the square foot equals in inches the $\frac{1}{10}$ of the numerical value of one solar day in *minutes*. But it is rather four squares of $\overline{6 \times 6}$, or of 36 square inches, by using the unit square of $\overline{6 \times 6}$.

(*d.*) $1440' \div 60' = 24$ hours, or one solar day in this division. Therefore, the $\frac{1}{24}$ part of one square foot equals one hour, and $144 \div 24 = 6$ square inches, the basic unit value from whence the source of this inquiry. As this can not be formed into a square, it is taken as the even part of the unit square in a row of 6 square inches, *as one hour*, which is the geometrical and numerical base of the system ; or, as hereafter to be seen, each unit square of this block of 6 is to be considered, *by division*, as making *four hours*, viz , 2 of *day* and 2 of *night*.

Thus it is seen that a system of *time* measures is, so to speak, inclosed in the British system of *long* and *land* measures, the limits of one being, or constituting, the limits of the other kind—the difference being that, whereas, in one kind, the measure runs from smaller to larger grades of measure ; in the other, it runs in the reverse, from larger to smaller.

Note, as a matter for antiquarians. Is it not possible that the British system of measures, possibly thus shown to be of Phenician origin, is a remaining link connecting the British people with the source of their origin, through the Druids? Their *gilgals*, and this development as to these measures, seem to point that way.

(§ 34.) It will be shown hereafter that the two great god-names, viz., *Jehovah* and *Elohim*, in their numerical values, stood (for one meaning) for a *diameter* and a *circumference* value, respectively. It is now well enough to state a relation which one of these names, in its *radicals*, seems to have to the measures under consideration.

There is a variation on the Parker values of 6561 to 20612, used in the pyramid as 113+ to 355+, but in the

Bible it is used as 113 to 355, whether as exhibiting this relation purely, or as implying a decimal, or both, is not as yet known with perfect accuracy of determination.

The god-name *Elohim*, or אלהים, has the radicals *El*, אל, as the stem *masculine*, with an *h*, or ה, giving a *feminine* quality attached, thus: *El-h*, אל־ה. The numerical value of אל added is the greatly esteemed kabbalistic value, or number, 31. The god-name radical is אל, or 31 ; but there was appended to it a terminative letter *h*, or ה, to, as it were, finish out its meaning or scope, thus: אל־ה or *El-h*. Both words were the proper expression of the god-name prior to that of *Jehovah*. The root, or nucleus, numerical value for *El*, being 31, with the letter *h*, or 5, added, it became 36, or 6^2, the unit square referred to above. *The 36 showed the system to which reference was indicated by the number value, while the value of the first radical, or 31, was a DIFFERENTIAL, used as a flux between that system and another, with which it was essentially connected.*

The circular elements rediscovered by John A. Parker were those on which *time* and *earth* extension values were in nature based. Time values, and their relation to earth extension values, seem to have been marked out through a system of measures founded on the number 6, and $\overline{6 \times 6}$. It has just been shown how such a system involves and coordinates time and earth extension values. Now, Mr. Parker, to obtain time values, reduces circular to solar time, through the intermediation of a unit of solar time value, viz., 5184000‴, which, as seen, is that value which will evenly divide in the numerical mile value of 5280, or rather of the acre value composing it, and which connects time with British long and land measures, as shown. Mr. Parker's time value circular is based on the area value of the circle inscribed in the square, which has been shown to be 5153. He uses it as 5153000‴, and thus, as a perfect *abstract* circular value, contrasts it with the *natural* circular, or solar day value of 5184000‴. The connecting

link between the two systems of value, or rather one such, is *the difference* between the two, and

$$5184 - 5153 = 31 ;$$

and 31 is the radical god-word *El*. But to *El*, or 31, add the other radical, or *h*, or 5, and we have *El-h*, or 36, which indicates some system of use, founded on the factor 6.

Again, take the limits of the British measures, as shown, viz. :

$$144 \text{ and } 5184.$$

Deduct from these values that of *El*, or 31, and there results

$$\overline{144 - 31} = 113, \text{ and } \overline{5184 - 31} = 5153 :$$

where one remainder is a pyramid and Bible value of diameter to circumference, or 113 to 355, and another is the area of the circle inscribed in the square of 6561, and at the same time is the value of a circular day in contrast with that of a solar day. And this shows the use of this *differential*, as *fluxing*, or *welding*, *time* and *earth* measures, through plane and circular foundations.

Note to Chapter II.

TABLE SHOWING A LINKING TOGETHER OF VALUES OF APPARENTLY INCONGRUOUS SUBJECTS MATTER.

(§ 35.)   This table, while given as a curiosity, because a regularly formed system of use can not be derived from it, is, nevertheless, believed to be of value as the hint of a well-founded system anciently made use of to correlate, or co-ordinate all sorts of measure.

(1.)   Diameter of circle, 113 ; circumference of same, 355 ; 113 being *aish* or *man*, and 355 being *shanah*, or *lunar year*.

(2.)   As to the ancient Greeks, Seyffarth, in his " Chronology," page 163, quotes as follows : " Theodorus Gaza (Petavii Uranology, c. 9), says expressly that the ancient Greeks had for their religious festivals, a lunar year of 354 days, but for the civil life, a solar year consisting of 12 months of 30 days each, with 5, and in leap years with 6, intercalary days.   The same is affirmed by Censorinus."   See, also, page 168 *et seq*. of same, as to the Hebrews.   The same statements hold good as to the Egyptians and the Hebrews.   Agreeably with this, take the ancient scale of *time*

(a.) 355   (b.) 360   (c.) 365
(d.) 355 — 1 = 354   (e.) 359   (f.) 365 — 1 = 364,
where on 355 the *shanah*, or *year* word of the Hebrews, the intercalation of 5 days makes the year of 360 days (equal to the celestial circle of 360 degrees, and the earth geographical circle of 360 degrees; also, the square of 6 as a factor); and the intercalation of 5 days on this makes the full solar vague year of 365 days. It will be observed, that by this arrangement the year of 360 stands as at *the mean value* between the two extremes 355 and 365; the first being *an abstract value* of circumference to diameter, while the last is the solar year time circle *in natural periods* of days. The ancient method of display of the year circle was of *a serpent* swallowing one or more units of its length: so, under this form,

355 — 1 = 354   359   365 — 1 = 364,
by the reduction of one unit the first scale is made to show the *lunar years*, viz, 354 days, which was the number of days of the lunar year *among all the ancients*, and 364 days which was the luni-solar year springing from the number 7 [§ 90, § 92 (a)], (and here perhaps, is an indication of a numerical use in " *Jared* " as to *Enoch*, who lived 365 years, for both ירד and ארד, added as to the character values, give the number 7). Thus it is seen that the form 113 to 355, is made the base of a scheme of, and is linked in onto a method of time admeasurements of two kinds.

(3.) In the Hebrew Bible there seems to be an undoubted connection between 113 : 355, and 6561 : 20612. Taking the last as the standard, then

6561 : 20612 :: 113 : 355.0001+;
showing the variation on 355 to make this proportion good. How these values were worked to bring out intended results is but conjectural, but in a measure, some of the uses shown are probably closely near the proper object. Now, in addition to the above forms, take the words *aish*, *man*, =, numerically, 113, and *Adam*, *man*, =, numerically, 144; which words are thought to be but conditions of each other,—then

113 : 355.0001+ :: 144 : 452.3893+
56.5 : 177.5+ :: 72 : 226.1946+
113 : 355.0001+ :: 36 : 113.0973+
where now 113 from a diameter value becomes, by a slight enlargement, a circumference value to the form $6 \times 6 = 36$. (A precisely same use is worked on 6561 : 20612 in pyramid construction.)

And so here we see a shifting of use of 113 from a diameter value of 355, as founding a year time scale, to a circumference value of the factor value $6 \times 6 = 36$, the base of the time and geographical measuring circles.   And here again, in 36, the British land measures are linked to the Hebrew uses of 113 to 355.

(As another variation on this,

$$355 : 113 \ :: \ 144 : 45.83 \ :: \ 1440 : 458.3$$
$$:: \quad 720 : 229.18+$$
$$:: \quad 360 : 114.59+)$$

Now, these values as shown are made use of in the Bible, and in the pyramid.

(4.)   Take the limits of the British long and land measures, viz :

(*a.*) 144   (*b.*) 5184 ;

where 5184 is the characteristic of one solar day in *thirds,* and springs from 144 as being the number of square inches in 4 square yards, and $5184 \times 121 =$ the limit factor of the acre. The Hebrew god-word, *El,* or 31, gives this value of 31 as a difference value, or link, running into two systems ; for subtracting it from (*a.*) and (*b.*), and there results,

(*c.*) 113   (*d.*) 5153 ;

where, by the use of the *differential El,* or 31, the diameter value 113 is linked on to the English measures, and in such a way that at *the same time* 5153 is produced.   Now, while 113 is the diameter value to a circumference of 355, 5153 is the value of the area of a circle inscribed in a square, whose area is 6561.   Here there is introduction to

The Parker forms.

(5.)   (*a.*) Area of square, 6561.

(*b.*) Area of inscribed circle, 5153.

(*c.*) Diameter of circle, 6561.

(*d.*) Circumference of same, $5153 \times 4 = 20612$.

On these values construct the formulations of Mr. Parker, as of his three revolving bodies :

$$
\begin{array}{ccc}
(1.) & (2.) & (3.) \\
\left. \begin{array}{c} 20612 \\[1em] 6561 \end{array} \right\} \times \dfrac{4}{3} = & \left. \begin{array}{c} 27482.6+ \\[1em] 8748. \end{array} \right\}, \text{ and this} \times \dfrac{4}{3} = & \begin{array}{c} 36643.55 \\[1em] 11664 ; \end{array}
\end{array}
$$

where we come to the pyramid value, for, 36643.55 is in inches the *standard* measure of the circumference of its base, and $11664 \div 2 =$ in inches its *standard* height.

In (2.), 27482.66, as a circumference, equals the value of a lunation, as shown by Mr. Parker as 27.48266+ *days*, to the diameter value of 8748. Now, 1 acre of 5280 blocks of $\overline{6 \times 6}$ long, by 33 blocks of $\overline{6 \times 6}$ wide, equals a length, or number, numerically, of *one mile*, and equals in area 627264 — o inches.

$$627264 \div \overline{6 \times 6} = 17424.$$
$$17424 \div 2 \quad = 8712.$$

(Also, 627264 ÷ 121 = 5184, the solar day value.) The object is to compare this 8712 the even division of, or $\frac{1}{720}$ of, an acre, in blocks of $\overline{6 \times 6}$, with 8748, the diameter, as shown, of a lunation, springing as it does from the Parker form.

While the use of the god-word *El*, or 31, as a *differential*, has been made above, the full god-word *El-h*, or 36, can now be used as one also, for

$$\left. \begin{array}{c} 8712 \\ 8748 \end{array} \right\} \div \overline{6 \times 6} = \left\{ \begin{array}{c} 242 \\ 243 \end{array} \right.$$

and

$$8748 - 8712 = 36:$$

that is, 36 is the *differential* by which the Parker forms for *time*, based on the relation of diameter to circumference of a circle, can be fluxed into the British measures (in square inches) of the acre value, which carries with it the numerical value of the mile as shown. 6×6, or 36, the value of the celestial circle, thus becomes the *differential* of a raised value of these quantities.

(6.) But 243 is equal, numerically, to the half the standard height of the great pyramid in British feet, and on a reduced scale is found as a measure of height of the queen's chamber. There is little doubt but that the relation 242 is taken into comparative account, also, in the pyramid structure ; if so, this very relation of differential comparison is a pyramid one. 242 is a valuable number in another way, for 5184, the characteristic value of a solar day $\times$ 121 (or $\frac{242}{2}$) = 627264, in inches the $\frac{1}{10}$ part of the area of one acre. This shows, that while 243, the pyramid height, as above, is adjustable with 8748 for divisions of lunar circles, 243 less *one* (of a value of 36 for the *one*), or 242, is adjustable with the characteristic of a solar day value, to obtain the area of the acre in square inches.

The circumference of 8748 as a diameter value, or 27482.66+, is used in a most remarkable way in the pyramid, to show a com-

parison between lunar and solar time. Here its diameter, or 8748, affords a means of contrast with a terminal land measure, for,

$242 \times \overline{6 \times 6} = 8712$, and this $+ 36 = 243 \times \overline{6 \times 6}$, or 8748.

(7.) Now,

$$\left. \begin{array}{c} 27482.66 \\ \\ 8748. \end{array} \right\} \times \frac{4}{3} = \begin{array}{c} 36643.55 \\ \\ 11664, \end{array}$$

giving as a result the standard measures of the pyramid; and treating 8748 and 8712 alike,

$$\left. \begin{array}{c} 8748 \\ \\ 8712 \end{array} \right\} \times \frac{4}{3} = \begin{array}{c} 11664 \\ \\ 11616, \end{array}$$

and $11664 - 11616 =$ the *differential* 48. The height of the pyramid is to twice its base side as diameter to circumference of a circle. By the enlargement on the standard, as will be shown, $\frac{1}{2}$ base side is $381.974+$ feet, or a diameter value to a circumference of 1200. Twice the base side, then, is a diameter to a circumference of 4800; and, as shown, 48, the $\frac{1}{100}$ part of this, is the differential between a system of *time* values, and a system of *land* measure values, objectively resting on the acre value, shaped for the formation of a mile, as in blocks of $\overline{6 \times 6}$, giving the 5280, or mile numerical value in feet, in the length of one side, in blocks of $\overline{6 \times 6}$ inches.

Thus, there has been shown a curious method of linking together of the relations

113	to	355,
6561	to	20612,
355	360	365,

while all are applicable in use, as exhibited in the measures of the great pyramid.

CHAPTER III.

SECTION I.

INTRODUCTION TO THE CONSTRUCTION OF THE GREAT PYRAMID.

(§ 36.)   To a mind unbiased by the prepossession of a theory that way, the assertion that the great pyramid of Egypt was built to perpetuate a series of measures, astronomical and otherwise, and to contain a mathematical and geometrical system of calculation and admeasurement, can not but be received with incredulity, and rightly so. *Given* a great number of pyramids in a land, the uses of which were notoriously for sepulchral purposes, and a rule is established applying to all, unless proof to the contrary can be made as to any one or more isolated exceptions.   But, taking the affirmative of the issue, then as to reconstruction ; *given* a pyramidal mass, utterly destroyed as to its exterior surface, save the corner base sockets, and a casing stone *in situ*, with the connection of the exterior with the construction of the interior lines seriously impaired, to be restored in an original measure, which has been lost. None but proof of an extraordinary kind as to ability to reconstruct, after the mental conception of what the architect intended to represent, ought to become, or will become, acceptable.   This is especially the case where the time of the building of the mass dates back beyond what may be called the historic age, and where every theory advanced must rest for support upon *its own intrinsic merit*, unsupported by positive evidence of any kind filtering through *the historical* channels of the world.

Where a question of measure is concerned, it will not do to cut and carve a mass, so as to fit it to such a measure, particularly adopted on supposition ; nor will it do, as occasion requires, to change the value of the adopted standard

to suit a stubbornly resisting condition of the mass. It is true that this method is the one to be employed in arriving at a possibility, or probability, *as a theory;* but, this accomplished, the further step is required of eliminating *all* theory, and *all* probability, and *all* possibility, leaving a standard of measure as fixed and rigid, for instance, as is the *British inch.* As a sequence to this, the restoration of the mass is to be made in terms and divisions of this measure. Subject to these considerations, and they seem to be fair and pertinent, if a standard of measure can be arrived at, as a rigid and fixed one, derivable from an elemental source, by use of which a structure can be erected, as to its whole and most of its parts, similar to that of the great pyramid in its geometrical shapes, and in such manner that the evidence is convincing that the actual measure of its original construction is being used, then, indeed, the recognition of that standard, its source, and its use in that connection, it is thought, should be conceded, even though the particularities of the method of use may not be certain.

(§ 37.) It is seen that from the elements of quadrature of Mr. Parker is to be derived the ancient *Egyptian cubit value*, and that in terms of the *British inch* and *foot* values. Of the two most important recoveries of the Egyptian value, viz., those of Professor Seyffarth and of Sir Isaac Newton, that of the last named was, as has been said, derived from admeasurements taken by Professor Greaves, of Oxford, from the interior work of the pyramid. The conclusion was that that measure had been used in the building of the structure. If, from the elements of Mr. Parker,—from whence the value, and reason of the value, of that same cubit measure is seen to be derived,—the pyramid structure, with the chief outlines of its interior works, can be restored, with a manifest reason why it was built,—this reason why being an essential in these very elements,—it will not only be a proof that the cubit value thence derived *was* the cubit value, but also that these were the elements whence it took its rise. Still further, if it should happen that such a restoration of the pyramid answers to the *Brit-*

ish measures, in *inches* and *feet*, of that structure, then it would seem almost impossible for even exacting criticism to charge upon such a complicated series of correspondences the escape of coincidence.

(§ 38.)   Professor Piazzi Smyth has given to the world a mass of measures of this structure.   He was laboriously, and even painfully, careful in their taking, on a measure adjusted to the British *standard* at Edinburgh, even to the balancing and dwelling upon *tenths* and sometimes *hundredths* of inches.   He had found such discrepancies in the measures of the multitudes of those who had preceded him, that he was prepared beforehand for his work.   Besides, he desired to discover who of those others had done their work well.   Of those who had preceded him, he found the measures of Col. Howard Vyse, of the French *savants*, and of Professor Greaves, exact and reliable.

(§ 39.)   There are four points to be taken into consideration, and which should always be had in mind in this matter, viz :

(*a*.)   That it is next to impossible to have measuring instruments alike, though taken from a same standard ; and it is almost impossible that, even though having the same measures, their uses will bring out the same results.   Discrepancies are liable, from these causes, to show themselves in *tenths* of inches, and even more, where lengths of thirty or more feet are taken.   No one will better appreciate this statement than Professor Smyth.

(*b*.)   Professor Smyth says most truly, in relation to the pyramid structure :

" The differences amongst our own results are partly due to dilapidation effects, but are partly dependent, also, on variations introduced by the builders, or actual errors in their work, as where the breadth of the grand gallery varies in different parts of its length irregularly, anywhere between 81.7 and 83.0 inches.   Another source of error is more uncertain, as where two parts taken by Sir Isaac Newton, and most other writers, as certainly intended to be the same in measure, are found to be positively different.   An example of this is presented in the breadth and height of the ramps, assumed by Sir Isaac to be equal, but found by my meas-

ures to be (on the mean of a number of places, but nowhere uniformly) nearly an inch different, without a probable uncertainty of more than 1—10 inches."

(*c.*) In long distances, in great masses of mason-work, it is absolutely impossible to practically obey, by reason of *jointing*, the mathematical exactitudes of the architect.

(*d.*) Professor Smyth found a very curious feature as to lengths of passage-ways, the proportions of the king's chamber, and of the coffer therein. He also infers the same as to the grand outlines of the pyramid base. It is : (1.) That a passage-way may present two lengths, the east side, say, being longer, or shorter, than the west side. (2.) That, compared with a perfect cubical chamber, the king's (and queen's) chamber is out of shape, or askew. (3.) The same happens as to the coffer. Very many circumstances connected with these irregularities of admeasurements would seem to point them as *purposed*, so that the differences between the measures of a standard cubical chamber, or coffer, and these as they are, served to give some derived result as the working out of a problem ; or else that a purposed variation in height or breadth might be intended to satisfy, in fact, two sets of measures differing from each other by some very slight quantity.

SECTION II.

STANDARD MEASURES OF THE PYRAMID.   ENLARGEMENT ON THE SAME, WITH THE REASONS WHY.   THE STANDARD AND EXACT, OR ENLARGED, MEASURES OF THE KING'S CHAMBER.

Standard Measures of the Pyramid.

(§ 40.) As to the objects of construction of the great pyramid of Egypt : (*a.*) One may be taken *as astronomical*, from the facts, that the *north base side* of the structure coincides with the parallel of 30° north latitude, and that the mass, as to its sides, evidenced by its corner socket

lines, is oriented as perfectly as could be expected of human ability. (*b*.) Another may be taken *as geometrical.* It was considered by the Rev. Mr. Taylor, who had made this structure a study (see " Our Inheritance in the Great Pyramid," by P. Smyth, prior to his " Life and Works "), that it was so built that its *height* should be to *one-half* its circumference as diameter to circumference of a circle. Professor Smyth shows that approximately this was the fact. Upon carefully taken measures, linear and angular, and upon computation, he comes to the result that the structure was—

In height,   486 feet, 2 inches ;

And that its base side was, by the measures of Col. Howard Vyse, *in length,*   764 feet ;

And, by the measures of the French *Corps,* $763 \frac{62}{100}$ feet.

(§ 41.) Take, as the result of Mr. Parker's problem of three revolving bodies, his formula for obtaining the sun's time, or rather the time of the earth about the sun. It is—

(1.) $20612 \times \frac{4}{3} = 27482.66+$, and this $\times \frac{4}{3} = 36643.55+$;

in which the last term, being the direct product from 20612, or value of circumference, pointed at 366, is, as Mr. Parker says, " the exact value of the passage of the earth around the sun, over one complete circle in space, in circular days." The diameters to correspond with this formula are—

(2.) $6561 \times \frac{4}{3} = 8748$, and this $\times \frac{4}{3} = 11664.$

Let it be remembered that, though this formula is taking the part of time values, it nevertheless is also in the value of British inches.

Take the two results and divide them by 12, thus reducing them to feet—

(3.) $\left. \begin{matrix} 11664 \\ 36643.55+ \end{matrix} \right\} \div 12 = \left\{ \begin{matrix} 972 \text{ feet for diameter.} \\ \text{[ence.} \\ 3053.629+ \text{ feet for circumfer} \end{matrix} \right.$

Then $972 \div 2$ will give the height as *radius*, and $3053.629+$ will be the *circumference* of base equal to the *circumference* of a circle to a radius of that height; or 486 will be the diameter value to *twice* the side of base, or to $\frac{3053.629}{4} = 763.407 \times 2 = 1526.814+$ feet, taken as circumference of a circle. These are the proportions corresponding to those of the great pyramid.

This division gives—

　　　(4.)　For height,　　486 feet.

　　　　　For base side, $763.\frac{407+}{}$ feet.

Compare these with Professor Smyth's results in British values, viz :

(5.)　For height,　　　　　　　　486 feet, 2 inches.

　　　For base side (French measure), $763.\frac{62}{100}$ feet.

Hence, the great pyramid exhibits itself as one not only monumenting a *method of quadrature*, the elements of which we possess, but also a measure of the *sun's time*, and also the British *inch and foot* values. On the premises and conclusion, then, the Parker elements seem, by a very strong showing, to have been known and used in the building of this structure. The worth of having a unit of measure, common for the expression of different kinds of value, is also apparent; for here astronomical and geometrical values are, by means of the common mason's measure in inches and feet, built into a stone book. It is thought that the idea is practically carried out in details, passing from more generalized to and through complex calculations; evidenced by the chamber, coffer, and other fine work of the interior. Even color may be used to classify or qualify the kinds of measure intended.

The formula in (3), viz :

$$\left.\begin{array}{c} 11664 \\ 36643.5+ \end{array}\right\} \div 12 = \left\{\begin{array}{l} 972 \\ 3053.629 \end{array}\right.$$

is the same as—

$$(6.) \quad \left. \begin{array}{c} 6561 \\ 20612 \end{array} \right\} \times \frac{16}{108} = \Big\} \text{ the same };$$

where use is made of the original Parker elements.

It may be taken, then, as determined, that this pyramid structure was planned in the measure of reductions from the Parker elements, and that they are the standard measures employed in its entire building, whether in mass or detail, subject to *variations on these standards*, in the working out of the various problems contained in the whole, and various parts.

Standard Measures of the King's Chamber.

(§ 42.) Take, as one set of derivations in detail, the dimensions of the King's chamber—

(1.)   206.12 inches ÷ 12 = 10 cubits, or 17.1766+ feet.

(2.)   17.1766+ feet × 2 = 20 cubits, or 34.3533+ feet.

$$(3.) \quad \left. \begin{array}{l} 20612 \div \dfrac{17280}{16}, \text{ or} \\[2ex] 34.3533 \times \dfrac{10}{18} \end{array} \right\} = 19.0851+ \text{ feet };$$

which measures, agreeably to the conditions, are the measures, taken at *the standard*, of the King's chamber; (1) or 17.1766+, being *standard breadth*, (2) or 34.3533+, being *standard length*, and (3) or 19.0851+, being the *standard height*, all in *British feet;* subject to variations therefrom for special purposes, as will be shown. The measures of this chamber, as given by Professor Smyth, are—

<div style="text-align:center">

Breadth,   17.19 feet,

Length,   34.38   "

Height, from   19.1   }

to 19.179 feet. }

</div>

(As to height, Professor Smyth gives his measures 19.1 to 19.179, with allowance, or as conjectural, because of the broken state of the floor when he took them. "*Floor broken up thus since the measures of Col. Howard Vyse.*" His measure for height was 19.1 feet.)

Actual Pyramid Measures, as Enlargements on the Standard, with the Reason for the Variation.

(§ 43.) The following is a method of variation on the standard measures as given; and one which seemingly controls the entire pyramid structure. The Parker elements are 20612 to 6561. The cubit value is $20.612 \div 12 = 1.71766+$ feet; and 10 cubits are $17.1766+$ feet. If the value of diameter 6561 taken as feet, be divided by $17.1766+$, or the measure of 10 cubits, thus derived, the quotient will be $381.97166+$ feet. This method is given for its results in the actual measure desired.

This, in effect, is the same as the division, or quotient, of diameter value of 6561 by circumference value, or 20612, under a formulation to obtain *a diameter value to a circumference of unity*, thus :

(1.) $20612 : 6561 :: 1 : .3183097+$, and,

(2.) $31.83097 \times 12 = 381.97166+$,

$\qquad\qquad$ and this $\times 2 = 763.94333.$

The effect is a very curious one. Take the following :

(3.) $20612 \times \dfrac{4^2}{3^3} = 36643.55 \div 48 = 763.407+$,

where the standard base side is obtained from the primary *circumference* value. By (1.), 3183097 is a *diameter* value, and raising it as shown, it becomes 763.94333, being almost the same by comparison. Then, working in *circumference* values, the standard pyramid measures are found ; working in *diameter* values, the *exactitude* comes by *the enlargement.* Referred to a primary principle,

$\qquad$Original *circumference* is, $\qquad\qquad$ 20612.

Changing to *diameter value*, it becomes $20626.47001+$.

(§ 44.) The standard measure of the side of the pyramid in (§ 41) (4), was $763.4074+$ feet. The half of this is $381.7037+$ feet. Compare this value with that obtained by the method of variation shown in (§ 43) :

$\qquad$(1.) $\quad$Standard, $\quad381.7037+$

$\qquad\qquad\qquad$Variation, $\quad381.9716+$.

This last multiplied by $2 = 763.94333+$ feet for the side of

base of pyramid, instead of 763.4074+ feet; and let it be assumed that this was, in fact, a variation taken on the standard measure, *yet one growing out of the Parker elements.*

Taking the base side at 763.94333+ feet, the proportionate height of the mass would be,

(2.)   486.341+ feet,

instead of 486 feet *as by the standard.*

(§ 45.)   This measure of the pyramid's base agrees with that taken by Col. Howard Vyse, as follows :

Vyse,	764.000	feet,
Above,	763.943+,	"
Difference,	.056+,	"

or, to within less than one inch in 9168 inches.

This Variation of Enlargement Applied to Ascertain the Measures of the King's Chamber.

(§ 46.)   If this variation on the standard be applied, for the admeasurements of the king's chamber, to ascertain the enlargements on the standard, there will result, as a base of estimate (§ 43), 206.2647001+ as the enlargement on the Parker circumference of 206.12 ; and,

(1.) $206.2647 \div 12 = 17.1887+$

as the enlarged width of the king's chamber ;

(2.) $17.1887 \times 2 = 34.37745+$

as the enlarged length of same ; and,

(3.) $34.3774 \times \frac{10}{18} = 19.0985+,$

as the enlarged height of same.

Or, comparing these with the *actual measures taken* (§ 42), as above, there results :

(4.)   Actual measured breadth,   17.19 feet.
       As above,   17.1887 "

       Difference, $\frac{13}{10000}$ of a foot,   .0013 "

(5.)   Actual measured length,   34.38 feet.
As above,   34.3774   "

Difference $\dfrac{26}{10000}$ of a foot, .0026   "

(6.)   Actual measured height,   19.100   feet,
As above,   19.0985+   "

Difference, $\dfrac{15}{10000}$ of a foot, .0015   "

or, literally, the difference has become so inappreciable that there is no method of ascertainment as to what the correct admeasurement is, by any practicable test of actual measure. *If, however, a law can be ascertained*, which will in its fulfillment demand the use of these variations on the standard, then they should be considered as data correctly taken. *There is such a law;* and its demands as to their nature coincide with the spirit or genius of the pyramid structure, as a measure of time.

Enunciation of the Law.

(§ 47.) The very great value of the number 6 as a factor, is at once recognized in the base of the British *long* and *land* measures, and also in the construction of the celestial time circle. That circle is of the value of 360°; it is divided into *minutes, seconds, thirds, etc.*, in the scale of 60′ = 1°, 60″ = 1′, 60‴ = 1″, and so on. This circle is subject to another division, as applied geographically to the earth, where 360° ÷ 24 = 15° to the hour of longitude, where 24 is also a multiple of 6, as 6 × 4 = 24, and where each degree = 69+ miles British. The primary division of this circle is on the base of 6 parts, subdivided for each part into 3600 parts, or 6 × 3600 = 21600′; or, 360° × 60′ = 21600′.

Now, by the variation on the Parker elements (standard), worked out, as seen, through the simple use of the elements themselves, the result is obtained of a diameter value, (by change on a circumference value), of 190985+ [§ 46, (3)].

This factor 6, which is of such great value, *is not taken empirically*, merely because it proves to be of such great practical use in the admeasurement and subdivision of time periods or land measuring rests, or stops, *but it is a legitimate circumference value, derivable from this variation on the standard Parker elements of diameter and circumference,* for—

(1.)   6561 : 20612 :: 381.97166 : 1200 :: 190.985+

: 600 :: 1.90985 : 6;

where the reduction from $\dfrac{6561}{20612} = 318309+ \times 12 =$

38197166, or $\dfrac{6561}{17.1766} = 381.97166$, divided by 2 = 190.985,

becomes the diameter value of a circumference of 600; or, 1.90985 becomes the diameter value of a circumference of 6; and this properly, and rightly, and exactly, belongs to the use of the Parker elements: so, this height of the king's chamber is *diameter* to a circumference of 60. See the play of change! The Parker circumference 20612, changed to a *diameter* value by variation, gave the exactitudes of measure of the pyramid in diameter for circumference terms. Among these is the height of the king's chamber, which now turns out to be a means of re-getting an integral *circumference* value, in the number 6, or 60. *The obtaining of this end seems to be the law of pyramid actual construction.*

(2.)   19.0985+ inches $\times \dfrac{216}{10}$, or $\dfrac{6^3}{10}$, $= 412.5294+$*inches,*

which equals the length of the king's chamber *in inches,* as the enlargement or variation on the standard; and,

(3.) 6561 : 20612 :: 412.5294+ : 1296;
or, there results, the length of the king's chamber, in inches, as a diameter value, proportioned to the number of inches in the *square yard British*, as a circumference; and it is well to reflect that $1296 \times 4 = 5184$, the characteristic value of one solar day reduced to *thirds.*

(4.) $\dfrac{41259.24 : 129600}{6} = 6875.48+ : 21600,$

and,

$$(5.) \quad \frac{6875.48 \,:\, 21600}{360} = 19.0985 \,:\, 60;$$

where the celestial, or geographical earth, circle of (6 × 60, or) 360° × 60′, equals 21600′ of division, in terms for circumference to height of the king's chamber as diameter. This, as a foundation, embraces all the time subdivisions of that circle into *hours* (24 equal to 1 solar day of $\left(\frac{144}{2}\right)^2 \times 1000 = 5184000'''$, as well as the distance divisions of the circumference of the earth in miles to the degree), *minutes*, or *primes, seconds*, and *thirds*.

So, also, as to the width of the king's chamber.

(6.) 6561 : 20612 :: 206.264+ inches : 648 inches.

So the law of construction of the pyramid is assumed to have been found on this showing.

Note, that the base side of the pyramid, by actual measure, being thus shown to be a diameter of 763.943+ to a circumference of 2400 feet, this is 24 × 100, and 24 is four times the factor 6. The base of the pyramid, then, would be co-ordinately represented by a square of 24, or 6 × 4 = 24, to the side; and this is the Garden of Eden form: and, also, it is the square Hebrew Zodiac of the 12 months.

The Discovery of this Law.

(§ 48.) The discovery of this law, and of its application, arose from a suggestion of thought on reading a passage in the "*Historical View of the Hindu Astronomy*," by Mr. John Bentley. It is almost evident that one intention of the architect of the pyramid, has been exactly reproduced in the use of a numerical system; and this accomplishment is but the going back to the original sources of the numerical instrumentalities which are in use to-day. Considering the value of this discovery, it is appropriate to give the original notes made on the subject, as follows (premising, however, that the author had before this obtained the numerical value of the enlargement on the standard,

and had made use and mention of it in Ancient of Days, without knowing, or seeing its application) :

"A very remarkable blending of all these systems can be given, arising from the actual method used by the Hindus, for the calculations of *sines, tangents, cosines, cotangents*, etc., which belongs to their most ancient system of astronomical calculations. This method is given by Mr. John Bentley, in his "*Historical View of the Hindu Astronomy*" (sec. 3, page 156). He is giving the various values for the computations of the value of π, one after the other, until coming to one very nearly approximating the true relation, he says :

" But Argabhatta, in the 17th chapter, in speaking of the orbits of the planets, gives us a nearer approach to the truth ; for he there states the proportion as 191 to 600, or as 1 : 3.14136, which gives the circumference a small matter less than the proportion of Bhaskara in the Lilavati. This, however, is not the invention of Argabhatta ; for it is employed in the Brahma Siddhanta, Surga Siddhanta, and by all the astronomers before the time of Argabhatta, as well as since, for computing the tables of sines, etc., though not immediately apparent. Thus, in computing the sines, they take the radius at 3438', and the circumference they divide into 21600' ; the diameter is therefore 6876 : hence the proportion is 6876 : 21600. Reduce these numbers to their last terms by dividing them by 36, the result will be 191 : 600, as stated by Argabhatta."

"Mr. Bentley was greatly familiar with the Hindu astronomical and mathematical knowledge ; not as a foreigner studying the reach of a nation in such matters, but as a resident in Hindostan of some fifty years. This statement of his may, then, be taken as authentic. The same remarkable trait, among so many Eastern and ancient nations, of sedulously concealing the arcana of this kind of knowledge, is a marked one among the Hindus. That which was given out to be popularly taught, and to be exposed to popular inspection, was but the approximate of a more exact but hidden knowledge. And this very formulation of Mr. Bentley will strangely exemplify the assertion ; and, explained, will show that it was derived from a system exact beyond the European one, in which Mr. Bentley him-

self, of course, trusted, as far in advance of the Hindu knowledge, at any time, in any generation.

"This formulation is the taking of a radius of 3438 to obtain a circumference to be divided into 21600 equal parts. The diameter would be 6876, and the reduction of this by 36 would be 191.   216 is 6^3, or, $\overline{36 \times 6}$, which shows use of a system founded on a multiple of which 6 is the basic factor.   3438 is an exceedingly near approach to a pure circumference value; which goes to show, as it is used as a radius, that which has been so observable heretofore of the expression of diameter, or straight line, values in terms of circumference.

"Take the reductions of 20612, the Parker circumference value, that give the dimensions of the king's chamber :

(1.) 20612 ÷ 600 = 34.3533+ feet, = standard length.

(2.) 20612 ÷ 1200 = 17.1766+ feet, =   "   width.

$$(3.) \left. \begin{array}{r} 20612 \div 1080 \\ 343.533 \div 18 \\ 190.851 \div 10 \end{array} \right\} = 19.0851+ \text{ feet, = standard height.}$$

" These are the standard measures of these dimensions, for comparison ; or, on which variations are raised in the working out of the various problems for which they were the base.   Take it that this Hindu problem involves these measures, and that the system of factoring by 6 is introduced, by which with these measures to work out tables of *sines*, *cosines*, *tangents*, *cotangents*, etc., and for calculations of *planetary times*, or distances.   So (1), perfect circular elements are required ; and (2), the circumference of these elements is to be divided into 21600 equal parts.   Can not the Hindu system be traced back to an absolutely perfect one, based on the Parker elements?   And, at the same time, can not this same Hindu system be attached through the same Parker elements, by actual measures, to the king's chamber, the passage-way therefrom, and to the ante-chamber works?   If this can be done, plainly, and mathematically, it will be an important achievement.

" Let use of the base of operations be in whole

numbers, viz., 20612, the perfect circumference, instead of its fractional derivatives. A perfect radius, instead of being, as Mr. Bentley represents that of the Hindus, or   3438.
is, say, the perfect one of   3435.333+
or, 2061200 ÷ 600. The diameter, then, instead of being 6876, will be   6870.66+
or 4122400 ÷ 600.

" Let Mr. Bentley's Hindu radius values be tested with the perfect ones—

(4.)   19.0851 : 34.3533+ :: 1910 : 3438.015 ;
where standard height of the king's chamber is to its standard length as Mr. Bentley's diameter reduction is to the diameter value he reduces from, 3438, plus the increment, to make up the exactitude, of .015, as seen. Comparison with the standard values of king's chamber measurement is thus made, subject to variations on these for special purposes. Howard Vyse's height of the king's chamber *is* 19.1, and Professor Smyth's measured length of the same *is* 34.38, the very numbers of Mr. Bentley.

" It is now desired to get a perfect circumference to divide into 21600 equal parts, and for trial—

(5.)   6561 : 20612 :: 41224 : 129509.0821 ;
that is, diameter : circumference :: standard length of king's chamber in one-hundredths of inches : circumference required. Divide this fourth term by 21600, to see what the value of the subdivided parts will be—

(6.)   129509.0821 ÷ 21600 = 5.995790 ;
and here, in this result, is evidently to be seen one object of the Hindu system, as to the values taken to get this division, viz., *to create a system from a numerical base of 6, which may be used as a factor throughout the system developed.*

" 21600 is the cube of 6, or $\overline{6^3 \times 100}$, and here, in the quotient, by the division of 21600 into the circumference value taken, there is obtained 5.99+, or a result with an exceedingly near approach to the factor 6, *desired as the base of the system.* But this base is wanted exactly ; therefore,

force back a perfect circumference value into an enlarged form, to accommodate to this state.   Were this quotient 6, instead of 5.99+, the dividend would be 1296 (by the way, the number of square inches in the square yard), instead of 1295+.   Carry back, then, with this value, by the proportion from the standard of Parker circular elements, and there results—

(7.)   20612 : 6561 :: 129600 : 41252.94+,
for the desired diameter value in the fourth term, in hundredths of inches, *as an enlargement upon the standard length of the king's chamber measure.*   Compare this with the standard—

(8.) Enlarged value,   41252.94
     Standard   "   41224
     Difference in hundredths of an inch,   28.94,
as a variation on the standard to obtain the desired result.

(9.) $41252.94 \div 12 = 3437.74 +$
is the radius required to complete the object sought; or, the diameter will be—

(10.) $3437.74 \times 2 = 6875.48.$

" And this is taken to be the *real* radius, and the *real* diameter belonging to the Hindu system ; which was just sufficiently obscured to cover the real derivation from the perfect elements of the quadrature.

(11.)   The radius given by Mr. Bentley, is   3438.00
        The true one is   3437.74
        The diameter given by Mr. Bentley, is 6876.00
        The true one is   6875.48
And again :

(12.) $\dfrac{6875.48 : 21600}{36}$ gives 190.985+ : 600,

for, and in place of Mr. Bentley's Hindu proportion of 191 : 600.

" Now, applying these results as a variation on the height and length of the king's chamber, the standard measures are, respectively :

(13.)   19.0851+ : 34.3533+.

The variations for the purpose stated, give :

$$(14.) \quad 19.0985+ \; : \; 34.3774+ \; ;$$

while the actual measures made, are :

$$(15.) \quad 19.1 \; : \; 34.38 \; ;$$

and in mason work of these lengths, the difference between 19.0985+ and 19.1, and between 34.3774+ and 34.38, in feet, is certainly inappreciable. While this is so, the purpose of the Hindu use is also thus shown to be perfectly fitting in measures, to such a use in the pyramid ; and the pyramid work, just here, almost undoubtedly involves circular admeasurements.

" *This slight but proportionate change is made to give a circumference value into which* 21600, *as* $6^3 \times 100$, *will divide evenly into subdivision of* 6. And thus, and here, and in this manner, is shown the working-in of the system of the division of a circle into 360 equal parts, and further subdivisions, to co-operate, and to co-ordinate, with pure circular measure. $21600 \div 60 = 360$, or 360° of 60' to the degree. $360° \div 24$ hours $= 15°$ to the hour. If the minutes in 24 hours are taken, or $24 \times 60' = 1440'$, then 1440 $\div 2 = 720'$, and $720'^2 = 518400'$, and this $\times$ 10 $=$ numerically, and in *minutes*, just one solar day in its last subdivision of *thirds;* and in the limits of 144 and 5184, are to be found the peculiar limits of the British square foot, and four times the British square yard of 1296 inches : and the British acre is the only least quantity into which 5184 will divide without a remainder.   5184 is again reproduced by 81×64, where the 81 is the square root of the Parker square of 6561, and the 64 is one-tenth the number of acres in the square mile.

" So, an exceedingly practical use is thus developed, as belonging to the meanings, or readings, of the king's chamber."

NOTE.

*A Connection between the Parker and Metius Forms with
Relation to the Factor 6.*

(§ 49.) In § 35 (3), it is seen that we have the forms:
$$(1.)\quad 6561 : 20612 : 113 : 355.0001+,$$
and—
$$(2.)\quad 113 : 355\ 0001+ :: 36 : 113.0973+.$$

Above, we have the change of circumference to diameter
values, to obtain the exact measures of the pyramid, with
dimensions of the king's chamber, of which height of
king's chamber is a base of change, again, from a diam-
eter, to get a circumference value, viz., in the form—

$$(3.)\quad 1.90985+ : 6;$$

where the *third* proportional is diameter to, the fourth, a
circumference of 6.

Through a like change on the Metius forms, we find in
the *third* proportional of (2) 6^2, or 6×6, or use of 6 as
a factor, for a diameter value, to the fourth, that of a cir-
cumference.

Both forms thus find a like base of structure on the same
factor, 6; but one finding it as circumference, and one
as *diameter* value. It is thought that herein, perhaps,
is a key to one of the chief links of connection between
the two forms.

SECTION II.

TABLE OF STANDARD MEASURES OF RESTORATION OF THE GREAT
PYRAMID, MADE THUS FAR.

(§ 50.) Standard circumference in inches, 20612.00
For circumference of base, raised to   36643.55
Standard diameter in inches,   6561.00
For height of pyramid, raised to $\frac{11664}{2}$.00
Standard circumference of pyramid,
    $36643.55+ \div 12 =$ in feet, $3053.62+$
                        in cubits, $1777.77+$

Standard base side of pyramid,

3053.62+ ÷ 4 = in feet,	763.4074
in cubits,	444.444
in inches,	9160.88

Standard height of pyramid,

11664 ÷ 24 = in feet,	486.00

Standard length of king's chamber,

206.12 × 2 = in inches,	412.24
in feet,	34.3533
in cubits,	20.0000

Standard breadth of same,

in inches,	206.12
in feet,	17.1766+
in cubits,	10.000

Standard height of same,

Base side, 763.4074 ÷ 40,

$$\left. \begin{array}{l} \text{or, } 20.612 \times \dfrac{11.1111}{12} \\[2mm] \text{or, } 34.3533 \times \dfrac{10}{18} \end{array} \right\} \begin{array}{ll} \text{in feet,} & 19.08518 \\[2mm] \text{in inches,} & 229.0222 \\[2mm] \text{in cubits,} & 11.11111 \end{array}$$

Enlarged Measures on the Standard.

(§ 51.) These are obtained on the formula—

6561 : 20612 :: .318309+ : 1,

where the object evidently is, among other things, to get a new diameter value for an integral circumference value of unity. It will be seen that this new diameter value can be raised so as to exhibit a very slight enlargement on the standard circumference values already used.

Enlarged height of pyramid in feet,	486.34118
Enlarged base side, 31.830972 × 24, } = "	763.9433+
And this is a dia. to a circumference of	2400.0000
in inches,	9167.31+

Enlarged height of king's chamber,

$$763.943328 \div 40 = \text{in feet,} \qquad 19.098583$$

$$\text{in inches,} \qquad 229.182998$$

Enlarged length of king's chamber,

$$19.098583 + \times \frac{18}{10} = \text{in feet,} \qquad 34.37744976 +$$

$$\text{in inches,} \qquad 412.529396 +$$

Enlarged width of same,

$$34.37744976 + \div 2 = \text{in feet,} \qquad 17.1887248 +$$

$$\text{in inches,} \qquad 206.2647001 +$$

Measures as actually Made or Computed in Terms of the British Inch and Foot.

(§ 52.) Height (estimated or computed
        by Smyth), in feet,   486.2 inches.

Side of base (French measures), in feet, $763.\frac{62}{100}$

Side of base (Col. Vyse's measures), in feet, 764.00
Length of king's chamber, in feet,   34.38
Width   "   "   "   17.19
Height   "   "   "   19.1

(§ 53.) A table can be raised on these enlarged values, where, in every case, 318+ is the quotient of the diameter divided by the circumference. It is thought that the usefulness of this value of 318+ is just that which gave it the name of the 318 trained or circumcised servants of Abram.

(a.)   1.9098+ feet diameter to a circumference of   6 feet.
       3.8197+   "   "   "   12 "
       229.1829 inches   "   "   720 in.
       458.3658   "   "   "   1440 "

(b.)   34.377449 ft. diameter to a circumference of 108 feet.
    412.529   inches   "   " 1296 in.
    103.132+   "   "   "   324 "

(c.)   68.754899 feet   "   "   216 feet.
    825.058 inches   "   " 2592 in.

(d.) 137.509796 feet   "   "   432 feet.
    1650.116+ inches   "   " 5184 in.

(e.) 275.019592 feet   "   "   864 feet.
    3300.232 inches   "   " 10368 in.

In this table, it is seen that the actual pyramid measures, for one feature, become diameter values for circumferences of which 6 is a factor. This is a fact of interest, when it is considered that the British long and land measures are based on the use of this factor; so, also, the Hebrew capacity measures; likewise, also, the Hindu measures of time.

The characteristic, or value, number of the Hindu
    time measures, as to one of their cycles, is   108
This is the half of   216
That of another period, called *Kalpa*, is   432
    "   "   " *Dwaper*, is   864
    "   "   " *Sandhi*, is   1728
That of one of their divisions of months is   5184

It is thus seen that the factor 6 co-ordinates long and land, and capacity and time measures, belonging, respectively, to different peoples.

(§ 54.) There is also a system of factoring to obtain the standard pyramid measures from the value of a circumference alone, as follows :

$20612 \times \frac{4}{3} = 27482.66+$ Whence the lunar time by Parker.

" $\times \frac{16}{9} = 36643.55+$ " " solar " " "

$20612 \times \dfrac{16}{108} = 3053.622+$ Circumference of pyramid.

" $\times \dfrac{16}{216} = 1526.811+$ $\dfrac{1}{2}$ "   "

" $\times \dfrac{16}{432} = 763.407+$ $\dfrac{1}{4}$ "   "

" $\times \dfrac{16}{864} = 381.7037+$ $\dfrac{1}{8}$ "   "

" $\times \dfrac{16}{1728} = 190.8518$ $\dfrac{1}{16}$ "   "

" $\times \dfrac{288}{17280} = 34.3533+$ $\dfrac{18}{160}$ "   "

" $\times \dfrac{288}{34560} = 17.1766+$ $\dfrac{18}{320}$ "   "

" $\times \dfrac{288}{69120} = 8.5883+$ $\dfrac{18}{640}$ "   "

The enlargements are to be obtained by use of the same factors, on the enlargement of 20612 to 2062647001, thus:

$$6561 \times 100 \div 20612 = 31.8309722+$$
$$31.830972 \times 12 = 381.9716664+$$
$$381.97166+ \times \dfrac{864}{16} = 20626.47001+ ;$$

which last result is the enlargement on the Parker primary circumference.

SECTION III.

EFFECT OF PUTTING THE PYRAMID IN A SPHERE, PRELIMINARY TO GIVING, OR WORKING OUT, ITS FURTHER MEASURES; AND STATED AS HYPOTHESIS OR THEORY. OBTAINING THE NUM-BER VALUE 216330.

(§ 55.) Thus there has been displayed the elements for the construction of the pyramid; the enlargement on the same, with the reason therefor; the standard measures, and actual measures thereof as enlargements, or variations, on the standard; as also of the three elements of the length, breadth, and height of the king's chamber.

It is thought there is a reason for the pyramidal shape of the structure ; and because the use of it in that shape can be made instrumental in the production of a numerical value, which seems to be recognized and made use of, or rather worked with reference to, by the architect, in most of the governing lines of the interior work, it is thought best to commence with the development of the number

216330

as a result of *placing a pyramid*, in terms of the original Parker measures, *in a sphere*. From this, as will be seen, some very extraordinary numerical relations arise, which harmonize with the supposed object, or genius of the structure.
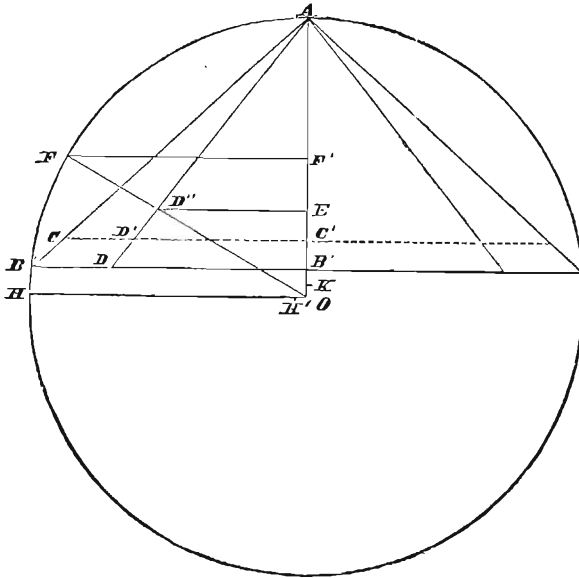
(*a*.) Let A D B′ represent a vertical meridianal section, and A B B′ a transverse vertical section (cutting in the corners) of the pyramid. Let $D B' = \frac{1}{2}$ side of base, and $B B' = \frac{1}{2}$ diagonal of base. Then,

Height   (standard), A B′ = 6561

$\dfrac{1}{2}$ Base side   (standard), $D\,B' = 5153$

$B\,B' = \sqrt{D\,B'^2 \times 2}$ " $= 7287.44248+$

To get this pyramid in a sphere, A B' must be produced to such a length, that with some point, as O, as a center, and with O A as a radius, a circle may be described which will cut in the points A and B. This can be done because B B' is a mean proportional between A B' and some length x, which gives $\dfrac{A\,B' + x}{2}$ = radius required.

This radius equals $7327.6588172+$.

As B B' is longer than A B', addition must be made to A B' to get this radius. The difference between them is $726.44248+$; and this added to A B' gives the 7287.44248. Now, though A B' has been increased to equal B B', it still is not the radius required; because, by difference in position, A B' thus increased, taken as a radius, can not inclose the pyramid. A further distance is required.

The true value is as stated, $7327.6588172+$. The difference between this and A B' increased as above is $40.216330+$.

Now, let B B' be increased by the *whole number* of this last difference, viz., 40; then there will remain as between the true radius, $7327.6588+$, of the circle inclosing the pyramid, and H H', the numerical value,

216330,

as a final difference.

216330 *Found as an Elliptical Difference.*

(*b.*) There are two ways to take up or represent an elliptical property : one is to measure out from a common central point to the end of the major, or minor, axis of the ellipse ; the other is to take a true circle, and exhibit the same difference *at the center*, on the quadrant lines. Here the latter plan seems to have been adopted :

$$
\begin{aligned}
A\,O &= \quad 7327.6588172 \\
H\,H' &= \quad 7327.442487 \\[2pt]
\hline
\text{Difference,} &\quad .216330 ;
\end{aligned}
$$

which thus introduces the property of an ellipse, as connected with the sphere, taken up or represented at the center thereof.

True Pyramid springing from the Pyramid placed in the Sphere.

(c.) It is seen that this pyramid thus placed in the sphere, is composed from the original Parker elements, in numbers. Now, any pyramid taken off this by a base line, as C C', drawn parallel with B B', will be proportional in all its elements with the pyramid inclosed in the sphere. On the pyramid lines thus placed in the sphere, another is required to represent the Parker formulæ—

$$20612 \times \frac{4^2}{3^2} = 36643.55+,$$

$$6561 \times \frac{4^2}{3^2} = 11664.\;;$$

in which 36643.55+ is to represent the circumference of the base, and 11664 is to represent the height. This can be done: reducing the values to feet, equals for circumference 3053+ feet; or, for base side, D'C' $\times$ 2 = 763.4074+ feet (standard measure); and, for height, 11664 ÷ 12 = 972 for diameter, and 972 ÷ 2 = 486 feet (standard measure) for radius or height; whereby, on the lines of the first pyramid, constructed from the original Parker numbers, another pyramid is made to spring from the same original numbers in terms of the Parker formula, for obtaining in 366.4355, as he says, "the exact time of the passage of the earth around the sun over the value of a complete circle in space in circular days." *The enlarged measures of the pyramid proper are to be had by extending the height and standard base lines.*

Solar Year Value obtained from $\frac{1}{4}$ Base Side of Pyramid, and the Sine of 30°.

(§ 56.) It is to be noted that the north base line of the great pyramid *is* located on the actual parallel of 30° north latitude. Let it be assumed that the sphere taken was in-

tended *to represent the earth;* that by the difference taken
up at the center, as shown, a datum, numerically, of the
elliptical property, or of *an elliptical property*, of the
earth's shape, or of its spheroidal character, was intended;
and then, that the line of 30° was intended as *a point to
work to* in the elaboration of the problems intended to be
displayed as *measuring the earth* and the planetary orbits.
A use of this can be made manifest.

(*a.*)   The standard length of D′C′, or $\frac{1}{2}$ base side of the
pyramid, is—

$$(1.)\quad 381.70370+ \text{ feet.}$$

The half of this is—

$$(2.)\quad 190.851851+ \text{ feet.}$$

In the circle of this diagram is represented the pyramid
taken at the standard height and $\frac{1}{2}$ base side, or 486 feet,
and 381.7037+ feet, respectively, as a proportional part of
the ideal pyramid drawn in the sphere.   The actual pyra-
mid is an enlargement on these values of 486.34118+ feet
for height, and 381.97166+ feet for half base side; and, to
effect this, the height will project beyond the circle .34118
of a foot, and the base line will be projected for the other
differences.

The radius of the standard circle is 610.638234+ feet.
Add, for enlarged height,   .341181+   "

(3.)   Enlarged radius,   610.979415+ feet.

(*b.*)   From the center O of the sphere (preceding figure),
draw the radius line O F, to intersect the parallel line of
30°, at F on the sphere, *taken as thus enlarged*.   The dis-
tance O D″, where this radius line is found *to intersect the
inclined side* of the pyramid, is found to be 381.22807 feet,
as follows: The angle A D″E = 51° 51′ 14″5; the angle
E D″O = 30°; then the angle A D″O = 81° 51′ 14″5; the
angle D″A E = 38° 08′ 45″5; and the angle A O D″ = 60°;
then—

$$Sin.\ 81°\ 51'\ 14''\ 5\quad 9.995595$$
$$Sin.\ 38°\ 08'\ 45''\ 5\quad 9.790754$$
$$Log.\ 610.979415\quad 2.786026$$
$$Log.\ 381.22807\quad 2.581185$$

If this is taken as the radius, then the value of the *sine line* of 30°, or O E, will be,

(2.)   190.614035+ feet.

Compare this value of sine of 30°, with the corresponding value of standard one-fourth base side [(*a*) (2.)], or, 190.851851+ feet; and let it be taken that the object has been to get the difference between these values, *as to their decimals*, for use, so that :

(3.)   190— | 851851 —190— | 614035 = 190— | 237816. The uses of this remainder are in exceeding great harmony with the scheme supposed. 190.851851+ is the standard value of the $\frac{1}{4}$ the base side of the pyramid, or 190.851851 × 4², or 16, equals the standard circumference of the pyramid in feet, or 36643.555+ inches, where the height of the pyramid is to this value as radius is to circumference of a circle. As to the use of the variation found :

(4.)   190.237816 feet equals, in inches,   2282.853792, and—

(5.)   2282.853792 × 4², or 16, =, in inches, 36525.660672, or, in tenths of inches, 365256.60672,

as a result from the use of this difference between the standard $\frac{1}{4}$ base side, and the *sine value* of 30° as taken.

(*c*.)   36525 is numerically taken as the *correct solar year day value*, or circle, as used in the calendars; but this carries it to a greater exactitude, for this value is in tenths of inches,   365256.6067+

The true and exact solar year value is 365256.3835

Difference,   000000.2232+

or 17″ in a year's time : so close an approximate that 5000 years would have to elapse to require the intercalation of 1 day, for correction of the calendar.

Note on § 56.—The results of thus putting the pyramid in

a sphere can be shown by diagram. The base of the pyr-
amid proper is 36643.55 *inches*, from which numerical
value Mr. Parker derives the *exact* solar year period. The
side of the square base is 763.4074 feet. This divided by
2 is 381.7037+ feet; and this by 2 = 190.851851 feet:
the very division on which *comparison* is made for the *dif-
ferential* of 190.237816, by running a *radius* to 30°, on the
circle of the *pyramid enlarged*. It is thus seen that this is

a method of working the differential on the $\frac{1}{2}$ base side,

and the $\frac{1}{4}$ base side, of the pyramid. 190.614035 being
sine of 30°, then 190.614035 × 2 = 381.22807 feet, becomes
the *side of a square measured on this circle:* so that this is
a *square of comparison* with that of the base of the pyramid,
in its seen division, to obtain a *differential* to procure the
solar year value. This division of the square base of the pyr-
amid, divides it into 16 squares ; 12 around the circumference
and 4 in the midst, framed on *two lines crossing in the
center.* This is *exactly* the square framed for the *Garden
of Eden*, and the *encampment* of the Israelites, showing
that the Hebrew idea is just that of the Egyptians. Now,

the square base of the pyramid is *the zodiac.* The $\frac{1}{4}$ of

this square is a variation on that square in a circle obtained
by putting the ideal pyramid in a sphere, cutting in the
parallel of 30°, and thus obtaining the solar year, as the
value of the zodiac. But the sphere itself is representa-
tive of the earth, the *diameters* of which are to be worked
out co-ordinately with the *time value* of the zodiac, and in
and from *the same data.* Was there ever a more magnifi-
cent conception ? The data for exact computation are the
governing ones, and the architect is cunningly *blocking out*
the cosmic work architecturally.

Equatorial and Polar Diameters of the Earth obtained.

(§ 57.) It is seen that this very exact solar year numer-
ical value, in tenths of inches, is architecturally obtained as

a variation, by difference, on 366435.5+ in tenths of inches, or the standard circumference of the pyramid proper, which value as 366.4355 is the very value, which, under his problem of three revolving bodies, John A. Parker raises from these very original elements of his quadrature (which, under the present application, give the pyra_ mid in the sphere, whence the real pyramid is taken) as " the exact value of the passage of the earth about the sun," etc. Now, if under the geometrical conditions framed in § 55 (a), and with the data obtained of 3664355+, and the elliptical value numerical of 216330+, taken up at the center of the earth, the actual miles numerical value of the earth's diameters can be worked out, it would seem, almost, that the design of the architect must be being reproduced, though perhaps in a stumbling way, and lacking in the refinements, and proper details, by which he almost undoubtedly was working out planetary exactitudes as to size and motion through geometrical elements, under a co-ordinating system of construction and of notation. As a fact, by a very beautiful calculation through these very means, the equatorial and polar diameters of the earth can numerically be obtained.

(a.) Let the values of the earth's diameters be taken at, for

(1.)   Equatorial diameter,   41.854.174+   feet,
        And another at some other point,   41.739.954+   "

The difference is   114219. $\dfrac{758}{}$ "

If the larger diameter be divided by this difference the quotient will be 366.4355+, and this is numerically that value springing from the Parker elements of $206.12 \times \dfrac{4^2}{3^2} =$ 366.4355+, which, as he says, is " the exact value of the passage of the earth about the sun over one complete circle in space in circular days;" and used otherwise for pyramidal purposes, is in 36643.55 inches the standard circumference of the pyramid.

[The question has been raised, by what authority Parker points this value at 366.4355+, and in truth he is not clear as to this. But a way can be shown, by throwing the values from inches into feet, thus: $\dfrac{20612}{12000} = 1.71766$ feet, or the value of 1 cubit. 120 cubits, then, is $206.\dfrac{12}{}$ feet, and this $\times \dfrac{4^2}{3^2} = 366.4355+$, as the Parker time day value, thus shown to be in British feet.]

In this formulation, since the smaller diameter taken is less than the dividend by the amount of the divisor, the quotient of the smaller divided by the difference, will be *one less* than the first quotient, or 365.4355+ : There results :

(2.) $\left. \begin{array}{c} 366.4355+ \\ 365.4355+ \end{array} \right\} \times 114219.758 = \left\{ \begin{array}{l} 41.854.174+ \text{ feet,} \\ 41.739.954+ \quad `` \end{array} \right.$

where the products are the return of the diameter values of the earth as taken.

But $114219.\dfrac{758}{}$ feet equal 21.63253+ miles British, and the difference taken up at the center of the sphere as shown, was, numerically, 21.6330 ; which, if it be taken as representing this miles value of difference, shows a discrepancy of $\dfrac{4}{10000}$ of a mile, or of 2 feet, as the difference of the earth's diameter as taken.

[Here it will be seen that 41854174 feet *is*, to all intents, the equatorial diameter of the earth. This being so, the numerical datum of 216330 found as equal to a miles elliptical difference value may be one assumed as being thus found, and on which, as one true value is already obtained, the other may be had.]

(*b.*) It has been shown that 36643.55+ is obtained by use of $20612 \times \dfrac{4^2}{3^2}$. Since 21632.53 is numerically nearly the same as 2061200, and yet is taken as a miles value, transformation may be made of 21.63253 into the terms of the formula $20612 \times \dfrac{4^2}{3^2}$, or by use of the factors 3 and 4. As it appears that—

(1.) $206.12 \times \dfrac{4^2}{3^2} = 366.4355+,$

so it seems that—

(2.) $21.63253 \times \dfrac{3}{4^2} = 365.04894+$.

Substitute this value in (a) (2), and, formulating, we have—

(3.) $\overline{366.4355+ \times 365.04894} \times \dfrac{4^2}{3^3} = 7926.92686$,

where, in place of the resultant value appearing in feet, it is now produced in *miles British*, of the equatorial diameter of the earth ; and—

(4.) $\overline{365.4355 \times 365.04894} \times \dfrac{4^2}{3^3} = 7905.2943+$,

where the result, in place of feet, is now produced in miles' value of the other diameter, as *taken*.

(c.)   But now there appears a co-ordination of values ; for, since, by the above formulation, (b) (4), it is—

$$\overline{365.4355+ \times 365.0489+},$$

this is precisely the same as the *square of the mean* of these values ; thus—

(1.) $\overline{365.24225}^2 \times \dfrac{4^2}{3^3} = 7905.2943+$;

and hence, for the larger diameter, there is—

(2.) $365.24225^2 + \overline{36504894 \times 100000} \times \dfrac{4^2}{3^3} = 7926.92686+$.

In these last formulations, 365.24225+ is the value of the mean solar year.

Note, that $7926.9268 \div 24 = 330.2886$, and by Professor Smyth the length of passage through ante-chamber to king's chamber, from edge of great step, is $330.3\pm$ inches ; and as it is seen that *this* miles' value is a *time* value through the *mean solar year*, the key of this passage-way measure seems to be found, as *a co-ordinating one*, of these very elements.

(d.)   But thus far, in these formulations, the equatorial value alone has been obtained. In § 56 (b), above, it is shown that the *sine* value, or O E, of 30°, compared with the $\dfrac{1}{4}$ of the base side of the pyramid, taken at the standard,

gives for use the value of 190.237816+ feet, which reduced
or scaled to tenths of inches, and multiplied by 4^2, or 16,
to get the variation on the entire circumference of the pyra-
mid of 366435.5+, in *tenths of inches*, the standard value,
gave, as a result, the almost exactly true solar year value of
in thousandths of days, 365256.383+.
The elements there used are directly connected with those
herein used—viz., the circumference of 366435.5+ is so va-
ried as to produce 365256, the *true solar year;* whereas here
the *mean solar year* value has been used, and that as com-
ing from use, in part, of the same value of 3664355+. The
miles value is numerically represented as a difference taken
up in the center of the sphere, in which the pyramid, in
the original Parker numbers, has been placed. From this
same center the radius line of 30° is taken, which gives the
sine value of 190.614035, whence 190.237+ was obtained.

Make use of these values so connected :

(1.) Standard circumference value in inches, 36643.55+.

(2.) 190.237816 feet (the variation on the $\frac{1}{4}$ side of the
pyramid, used above) $\times 4 = 760.9512$ (the variation on the
value of the full base side of the pyramid).

(3.) Now, if the $\frac{1}{10}$ of this last, in a scale of inches for
feet, or 76.09512+, be taken from 366.4355+, or the $\frac{1}{100}$
of the full circumference of the base, in inches, the differ-
ence is 290.34043+ ; and let this be considered, on a scale
of feet for inches, as the number of times the difference
between the equatorial and polar diameters is taken, in-
stead of 366.4355+, the number of times the difference be-
tween the diameters already used was taken.

(4.) Then the larger diameter divided by this value
will give the new difference, the ultimatum sought, or,

41854174+ ÷ 290.34043 = 144155.5,
in place of   114219.758+
as already taken [§ 57 (a.)].

(5.) Then the larger diameter less this difference will give, say, the numerical value of the *polar* diameter, or,

	41854174	feet,
less	144155	"
equals	41710019	"

or, in miles British,   7899.6248

In fact, this resultant value is to all intents the true value of the polar diameter of the earth. Comparison gives as follows :

(6.) Equatorial diameter assumed, 41854174+ feet,

As ascertained,	41852864+	"
Difference,	1310+	"
Polar diameter assumed,	41710019+	"
As ascertained,	41708710+	"
Difference,	1309+	"

Note.—While there is enlargement as seen, yet this scarcely affects the *difference* of the diameters, thus :

Equa. found,	7926.9268	miles.
Polar, "	7899.6248	"
Difference,	27.3020	"
Equa. received,	7926.6789	"
Polar, "	7899,3768	"
Difference,	27.3021	"

Now, while there is very much elaboration in the working out of the polar value results, in the way of scaling of measures, it must be borne in mind that in architectural, or object, or block building in of such problems, just this class of work is to be expected of necessity ; therefore, this elaboration is in full harmony with the genius of the problem making of the entire pyramid structure—in fact, it may be expected in a far greater refinement of elaboration than here shown, as is testified to by the greater and greater amount of subdivision, and change of scales, as one progresses from the outside to the coffer in the king's chamber ; also, by the refinements of measures displayed on the walls and in the works of the ante-chamber, the recess of the queen's chamber, and the wall courses of the king's

chamber. It seems evident that just this nature of work-
ing of values was made, but unfortunately for us, our high-
est efforts, at present, can only reach to a study as to the
keys of the method of calculation employed. The above
may be the exceedingly detailed elaboration of results
somehow, by some architectural device, plainly set forth
in the concrete, in natural exactitudes.

All these results depend upon the placing of an original
pyramid in a sphere, in the Parker values, giving the ele-
ments shown, and especially the final difference of—

216330.

As to the extraordinary combinations shown, all harmo-
nious among themselves, and in full accord with the genius
of the whole pyramid system, as it has been, and as it will
be seen, in its further developments, they seem to claim
recognition as the real mental intent of the architect, rather
than as the results of a happy inventive faculty. It is
thought that it is almost impossible to conceive of the pos-
session of a power of inventing such co-ordinating harmo-
nies as are above set forth, especially where all the steps
are so fitting to architectural work, where the object would
be to obtain correct numerical data, which obtained, the
harmony of kinds of measure would, as has been said, be
preserved, by changes of the scales of measure.

note to § 57 (d).

The processes stated are somewhat strengthened, as be-
ing rightly taken, from the following : The circumference
of base of the pyramid is 36643.5555+ inches, or
3053.629629 feet. Take $\frac{2}{10}$ of this. It is—

(1.) 610.725925+ feet ;

whereas, the radius of the sphere, as shown, is 7327.
658816+ inches. This reduced to feet, is—

(2.) 610.63823 feet.

Raise both to pyramid circumference values—

(1.) becomes 3053.6296+ feet.

(2.) becomes 3053.1911+ feet.

Raise both to radius of sphere values—

(1.) becomes 7328.7111096 feet.

(2.) becomes 7327.658816 feet.

The placing the pyramid framed from the original numbers in a sphere is evidently done, for one thing, to get a variation on *the circumference of the base of the real pyramid.*

Now, 7327.658816 ÷ 20 = 366.3829416, as a variation on 366.4355+. Take the earth's equatorial diameter, as received, at 7926.67897 miles. Then, 7926.67897 ÷ 366.-3829416 = 21.6349+ miles, different, numerically, from the 216330 taken up as an elliptical difference in the sphere .0019.

Such correlations can not be accidental. It goes to prove that the processes are those of nature, and that the pyramid constructors knew the processes.

(§ 58.) If the conclusion be well taken, that the architect of the pyramid recognized in this value of 216330, numerically, a miles difference in value of earth's diameters, whence, with the solar year time values, the earth's actual equatorial and polar diameters were numerically obtainable, the grades of measure springing from the inch and foot British, and these, with the cubit, from the Parker elements, then the overwhelming importance to man, as man, of this fact, is explainable.

This measure is just that one that, with the ancients, seems to have stamped the whole system as *natural* or *divine*, i. e., showing that man was but dealing in measures, in some sort shadowing forth mechanical principles of construction, which it had pleased the Creator of all things to adopt as the *law of creation.* Man seems capable, for instance, of arriving, by use of his own powers, to a knowledge of the *abstract* truths of this system, just as is evidenced by the works of John A. Parker. By *observation*, the application of this system to the measures of natural periods of time could be arrived at. But if the attempt was to be made to apply the system, so that, in the planet-

ary system, measures of time were to be co-ordinated with
the *actual material* extension of the planets, before man
could recognize or realize this, it would become necessary
for him to establish *some unit of measure for practical
use* as *an inch*, for instance, *marked on a rod or rule*.
Whatever such measure he might adopt, he would have,
of necessity, to abide by its results. What, therefore,
would be the chances, that, in the practical adoption of
such a measure, as by the *averaging of barley-corns*, or
taking the measure of the *average length of the thumb*,
he would actually take that very measure by which the
recognition that, in mechanical construction, the planets, *by
law*, were to co-ordinate in measure with their times, in
terms of measures growing out of a common system, would
or could come to him? The answer must be that they
would be millions to one against the hitting on the exacti-
tude. Therefore, a measure being in use, and found to
answer this purpose and end, would be the proof, above
all others, of man's possession, however he came by it, of
the actual, practically adopted, material measure, by which,
under the *law of creation*, the Creator mechanically or
materially constructed the earth and all other planetary
bodies.

(§ 59.) As, however, to this number, among other
places, it is found that this very numeral, 216330, found, at
first, as notating the difference of the elliptical diameters
of the earth in miles (which diameters are measurable in
terms of the square of the mean solar year period, and by
means of the true solar year value), again develops itself
quite a number of times in very important measures, one
of which is on the level of the base of the grand gallery,
the approach to the king's chamber, where the earth meas-
ures and the earth time measures come together to be
measured on a circumference (of subdivisions) of the num-
ber 6, as of 360°, growing out of the factor 6 (and, by
change, on a square of $\overline{6 \times 6}$, to co-ordinate round with
plane measure), which is the circumference to the height
of this chamber as diameter; which, again, springs from

a circumference of 1 to a diameter of 318+, which 318+ is, or was, the Gnostic value of the term Christ, and was what was intended by the 318 trained servants or *circumcised* men of Abraham, in the Hebrew Bible. And all this comes directly in harmony with the elevation of the floor-level of the king's chamber above the base of the pyramid, which is 137.509+ feet; for this value is in inches 1650.116+, which is the diameter to a circumference of 5184, which is the characteristic value of the subdivisions of a solar day into *thirds*, that full value being 5184000''' ; which value, again, is only evenly divisible into the acre value of the British land measures, which acre value is the base of the mile's British value.

<div style="text-align:center">———</div>

<div style="text-align:center">SECTION IV.</div>

THE KING'S CHAMBER AND THE SQUARE ROOT OF THE SOLAR YEAR.

(§ 60.) In § 57 (*c.*), (*d.*), it is seen that the use of the 216330, connected with the pyramid, involves the numerical value of the earth's diameters in miles, in terms of the square of the year value in days; and it is stated that the king's chamber levels involve this number. In § 51, § 53 (*a*), it is to be seen that the height of the king's chamber is a diameter to a circumference of 60; and involves, agreeably to the measures of that chamber coinciding with the Hindu formula for obtaining *sines*, *cosines*, *tangents*, *cotangents*, and *planetary orbits*, as per Mr. Bentley, the circle of 360°, with its divisions for measuring the solar year, and also the *hour values* on the earth's circumference *in miles*. The height of the king's chamber, spoken of, is in feet, and is a diameter value of 19.0985+ to a circumference of 60. This, in inches, would give a circumference of 720, and this squared, or the area of that height,

equals 518400, or the $\dfrac{1}{10}$ of the subdivision of a solar day

in thirds. The $\frac{1}{5}$ of 720 is 144, or the square of 12. The height of the chamber *is* divided into 5 courses of masonry, and though, unevenly, on account of a difference caused by filling in on the lower course, may be taken as symbolizing the use of the number 5, as thus used (also, $\frac{1}{5}$ of 60 is 15, as of 15° to an hour's time on the earth). The above division is exactly that of the Egyptian equatorial, according to Seyffarth, and borrows strength from a peculiarity of the Hebrew Bible numerical system. The word *Adam* is 144, and *Elohim* (in a circle) reads 31415. But the radical of *Elohim* is *El*, which is 31. The solar day value is 5184 in one of its subdivisions, and this is a multiple of 144. Subtract the value of *El*, or 31, from 144 and 5184, thus—

(1.) 144 — 31 = 113. (2.) 5184 — 31 = 5153, and in (1.) there remains a diameter to a circumference of 355, which is the Hebrew word *Shanah*, for *lunar year;* and in (2.) there remains the Parker area of the circle inscribed in the square. All these are pyramid numbers, and, as seen, involve the value of a *day, year, mile,* and *foot.* Thus, 144 and 5184 are the extremes of the British long and land measures, inasmuch as one is the square of 12, and the last, which is the number of inches in the square yard multiplied by 4, is evenly divisible only in the *acre* value in *inches*, which acre value is the base of the *miles* value. Thus, in this king's chamber, is a mingling of co-ordinations of use of the inch, foot, yard, and miles value, with those of days and years. One means is, as seen, by means of the *square* of the solar year value; and the number 216330, which involves this use, is also made use of in the levels of approach to the king's chamber, as is shown in § 75, thus bringing this relation of the square of the solar year to bear upon that chamber in the use of its dimensions.

(§ 61.) (1.) Professor Smyth discovered a persistent variation in the lengths of passage-ways and dimensions

of the chambers and of the coffer; that is, they all pre-
sented these variations on a mean of measure taken as a
standard.   He was forced to the conviction that this was
purposed, and, if so, it was as a scheme for the exhibition
of variation of measures.   The ability of the workmen to
work to exactitude in these respects was amply displayed,
and especially in the king's chamber, whose walls are in
the hardest granite, polished to the highest reach of art,
and whose joints are to be likened to the thickness of gold-
leaf.

(2.)   The king's chamber is, as shown—

in height,   19.0985+ feet.

(*a*.)   The true solar year is,   365.2563835
(*b*.)   The mean solar year is, 365.24225+

$\sqrt{}$ of (*a*.) is 19.11168
$\sqrt{}$ of (*b*.) is 19.11131

The variation on the *height* line of the king's chamber of

.0128 of a foot, or of $\frac{15}{100}$ of an inch, affords this value;

that is :

19.0985 + .0128 = 19.1113 feet,

or the square root of the solar year day value.

(3.)   Then, on this extremely small variation, which is
within the limits of those observed by Professor Smyth,
the square of the height of the king's chamber equals that
very quantity, or the year day value, of which its height,
at its first intention as an enlargement on the standard, af-
fords the subdivided measures on the celestial circle of
360°.   So, the square of the solar year is involved in the
miles value of the difference of the earth's diameters, as
connected with the king's chamber; which, by one of its
dimensions, exhibits in the square root of that value a meas-
ure of the circumference of the celestial circle of 360°.

So, conclusion can be drawn that one function of the
measures of the king's chamber was to set forth the cor-
relation of solar time with the material extension of the
earth, in terms of the British inch, foot, or mile.

§ 62.   (*a*.)   The Hebrew Biblical scheme   correlates

strongly with this : Take the last letter of the alphabet, or *tau;* its mark is that of a *cross*, or +, and its numerical characteristic is 4. The word *Garden of Eden*, taking the characteristic values of its letters, and adding them, equals 24. Divide this by 6, and the result is 4, or $24 \div 6 = 4$. Consider this as descriptive of the cross letter, or *tau*—i. e., that it represents four lines in the form of a cross, each line having the value of 6. On this, as a frame-work, finish out the large square, and there results four squares of $\overline{6 \times 6}$ each. This equals four areas of 36 each, and the whole equals a square area of 144, or *Adam*, who was placed *in* the Garden of Eden. But it was found, § 35 (3.), that—

(1.) 113 : 355.0001+ :: 36 : 113.0973,

where 113 is a form of *Adam*, in the word "*man*," or *aish;* from which form, as Adam himself says, *Eve*, or *the woman*, or the *mother of all living*, was called or named, because she was taken out of this form of 113, or "*man*," or *aish*. Instead of an *area* of 36, then, extend the cross marks, so that the four arms shall represent four *straight* lines of 36 each, agreeably with the value of 36 in (1.), and perfect the square. Now, there are four squares of 36×36 each, or, in *area*, 1296 each, or the numerical value of the square yard, based on lines of 36 in length. The four squares, then, equal $1296 \times 4 = 5184$, or *one solar day sign;* and, in fact, the Garden of Eden *is* the *seventh day*, thus utilized. The week of *seven* days is a circle of time. Bend them into the form of a circle, and the count is as of the *golden candlestick* of *seven lights*, of two sets of three days, and one *in common*, the phenomena when the cross-bars of the cross are counted as already shown. Each 36, as a straight line, is a derivative, as enlargement on 113, or "*man*," in (1.) above, as having for its circumference 113.098+, which is a parallel use to that of the height of the king's chamber, for exactly the same end of getting the use of the factor 6, except that, in this case, it obtains it in right lines, or shifts circular into rectilinear and square measure, which use of right line for

circular measure is notoriously true of the Hebrew Kabbala.

It is evident that the like uses, and variations, can be made on this, or the Hebrew form, with the Egyptian. But, in fact, it would rather seem that both forms were made necessary as developments of each other.

(*b.*) The value of the word *Arets*, or *Earth*, adding the characteristic values of the letters, is 12. It was, however, the *dry*, or *arid*, or *unfruitful* earth. To become prolific it had to assume the *Adam* form, which it did by *squaring* it, or $12 \times 12 = 144 = Adam$. This form as $144 \times 5 = 720$, and $720 \times 5 = 3600$, becomes the word *Adam-h*, or *H-Adam-h*, or the *fruitful Earth*, or the form of *Mars generator*. Here it can be seen how the Garden of Eden seems to contain all the elements on which to frame a cosmogony, by the help of other forms to which it is cognate—viz., those shown as connected with the pyramid.

SECTION V.

THE BASE OF THE PYRAMID.

§ 63.   In § 55, in the diagram, D'C' is the length of $\frac{1}{2}$ side of base of the pyramid, taken at the standard, or 763.4074+ feet, divided by 2. The actual base side is the enlargement on this as shown, or, 763.9433+ feet, divided by 2. The actual construction is a pavement of *one cubit* in thickness, or, 1.71766+ feet; which thickness is *included* in the height of the structure. Col. Howard Vyse places the base of the pyramid on the plane on which the pavement rests, and gives the thickness of the pavement

at   1 foot, 9 inches;
or in decimals,   1.75 feet.
As above   1.7176+ feet.
Difference,   .0324 of a foot.

SECTION VI.

LOCATION AND LENGTH OF DESCENDING PASSAGE-WAY, WITH
RESPECT TO THE INCLINED OUTSIDE, TO THE BASE, AND TO
THE VERTICAL AXIAL LINE OF THE STRUCTURE.

§ 64. (1.) Let $EA =$ the inclined line of the sloping
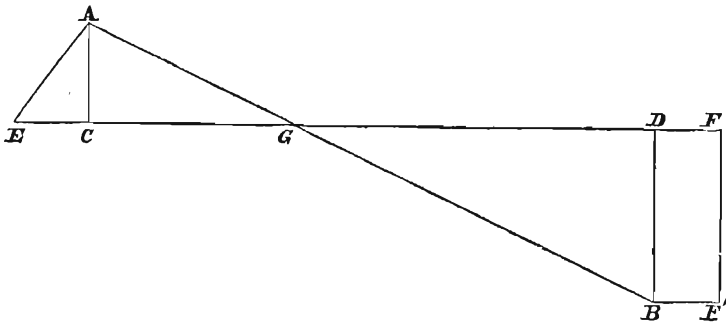
side of the pyramid from base to A. Let $EF =$ the $\frac{1}{2}$
side of base. Let $AB =$ the length of the floor line of
the descending passage-way, intersecting EA at A, and
extending to B, or to the foot of DB. Let $AC =$ ver-
tical height of A above EF, the base of the pyramid.
And let $DB =$ the vertical height of the base above the
point B, or foot of the floor line of the descending passage-
way. The measures of these various lines, the exactness
of which will be shown hereafter, are as follows :

(2.) A C equals 31 cubits standard, or 51.53 feet, plus
the thickness of the pavement, of one cubit, or 1.71766+
feet, or a total of 53.24766+ feet, or 638.972 inches.
Since the height to base side is as 6561 : 10306, the height
to $\frac{1}{2}$ base side is as 6561 : 5153 ; and to find E C there is
the proportion,

6561 : 5153 :: 638.972 inches, or A C : E C, or 501.
847693339 inches, or 41.82064111 feet.

Then E C equals, in length, 41.82064111 feet.

(3.)   D B equals, in length, or height vertical, 100 feet, or 1200 inches ;

Then A C + D B equals, in vertical height, 153.2476+ feet.

(4.)   A B equals 200 cubits enlarged on the standard. The standard being 343.5333+ feet, or standard length of the king's chamber, the enlarged value will be 4125.2940+ inches, or 343.7745+ feet.

(5.)   To find C D ; $\overline{A C + D B}^2$ taken from $\overline{A B}^2$, or $\sqrt{\overline{A B}^2 - \overline{A C + D B}^2} = C D$, or $\sqrt{343.7745^2 - 153.2476^2} = 307.727248+$ feet, or 3692.726982+ inches.

(6.)   E C + C D = 41.82064111 + 307.727248 = 349.547889 feet, and 381.97166669 feet, the half base side of the pyramid, less 349.547889 = 32.42377 feet, the distance from D to F, the center of the structure.   The distance from B to F′ is the same.

Then, the distance from the foot of the descending passage-way to the central axial line of the pyramid is 32.42377+ feet.

(7.)   With these data, the angle A G C, or that which the floor-line of the descending passage-way makes with the base line of the pyramid, can be readily found, as follows :

Log. $\overline{A B, 4125.29}$ inches, = 3.615454
Log. $\overline{A C + D B, 1838.97}$ = 3.264576
Sin. 90,   10.000000
Sin. 26° 28′ 24″10,   9.649122

(§ 65.)   It is well enough to give the measures and data for measures from Col. Howard Vyse and Professor Smyth. Col. Vyse excavated the rubbish heap laying over E A, and, at the foot, took the measures of the pavement as to its thickness, which he calculates in the measures of the mass.   At E, he found a casing-stone in place, which gave him the position of E and the line E A.   The floor line of the passage way terminates in a broken edge, which, measuring from E, for perpendicular height, he gives at 49 feet above the bottom of the pavement.   Continuing from this edge, downward, 162.3 inches (Professor Smyth's

measure, who says: "From the beginning of the roof dropped onto the floor line to the edge of basement sheet is 162.3 inches"), along the floor line, brings one to the place where the roof of the passage-way commences, in the, at present, broken masses of masonry. Thence, Col. Vyse measured down 3850 inches. As to this last distance, he says: "Or present length inclined of whole entrance passage, 3850 inches. But ancient length must be increased for an extent of *more than* 276 *inches* broken away at the beginning, with the exterior of the building, and is therefore more nearly 4126 inches." That is, his estimate of the restored distance A B is 4126 inches. The measure here taken is 4125.294 inches, differing from his estimate by the amount of .706, or $\frac{7}{10}$ of one inch, in that many thousands of inches.

He gives the angle of the casing-stone found as 51° 50′
He gives the angle A G C (§ 64) as   26° 41′

(§ 66.) Following down the lead of the descending passage-way, he gives the distance A D to the subterranean chamber, at 27 feet; for he measured along the roof line, not the bottom line. He does not give the distance B E, but on Perring's plates of Vyse's measures, which are very faithfully done, while A D shows as 27 feet,
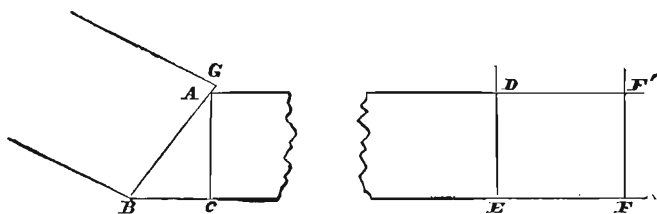
B E shows as 29 feet, which goes to confirm the opinion that the line G B is parallel to the exterior inclined line of the pyramid. The height of A C he gives at three (3) feet.

Taking Col. Vyse's data just as he gives them, and for B F, that is, from the foot of the descending passage-way to the center of the pyramid, the values are—

$$
\begin{aligned}
\text{B to C} &= \quad 2.358+ \quad \text{feet} \\
\text{C to E} &= \quad 27.000 \quad \text{``} \\
\text{E to F} &= \quad 3.56899+ \quad \text{``}
\end{aligned}
$$

Or a total of 32.92699   "

While this is so, *he says* that F, instead of 3.568+ feet, is distant from E 8 feet—a manifestly erroneous calculation, from his *own data*. The difference between the results of calculation from the data of Col. Vyse, and from those stated for this distance, is as follows:

Col. Vyse's estimate, 32.92699 feet.
As given above,   32.42377   "

Difference,   .50322   "

and this is to be accounted for by the difference of the angles taken, his being stated at   26° 41′
while that resulting from the data herein
    taken is   26° 28′ 24″10.

There is very strong confirmation as to the correctness of this last stated angle. Without any certain data to go by, the only method of obtaining the relations between the interior and exterior lines of the structure, was by means of this angle; and therefore it was of the greatest importance to obtain it correctly. Aware of this, Professor Smyth prepared for its determination to within very close limits. He found a material difference between the real angle, and that as stated by Col. Vyse, of 26° 41′. He used three different instruments, and made a number of separate trials for each instrument; and his determinations may be looked on as, for the condition of the passage itself, as close an approximate as may be expected to the true angle—the correction being the obtaining those original elements of construction, which gave rise to this angle. His results are as follows:

(1.)	By one	method,	26° 27′ 26° 26′5	} mean,	26° 26′5
(2.)	By another	"	26° 25′ 20″	"	26° 25′ 20″
(3.)	By another	"	26° 27′ 58″ 26° 28′ 16″	"	26° 28′ 7″

The admeasurements used to obtain these *means* are themselves the means of measures, some of which exceeded that angle here used. Professor Smyth while averring that the true angle is very closely connected with the results given by him, lays no stress upon any particular set, considering them all as equally worthy. But compare one set of his with that angle resulting from the data herein used for locating the floor of the passage-way :

(4.) Professor Smyth's, 26° 28′ 7″

(5.) That stated above, 26° 28′ 24″10

showing a difference exceedingly small, as may be realized if one will try to read it on the face of an instrument.

§ 67. The genius of the pyramid demands that the angle of the side incline be,   51° 51′ 14″5

Col. Vyse got by the measure of one stone, 51° 50′

Compare these, and then the agreement of the angles,

26° 28′ 24″ 10
26° 28′ 7″,

then the restored length of the descending passage-way by

Col. Vyse of   4126   inches,

with that above of 4125.294   "

then the restored height of the intersection of the floor line of the passage-way with the slope exterior line, as made

by Vyse with his own angle of 26° 41′, 53.648+ feet,

and with the angle of Smyth, say,   53.1975   "

and that above,   53.2476   "

Consider with these data that the measures here obtained ire from use of the Parker measures of the pyramid, harmonizing with the general measures of the mass, and of he king's chamber: and there is needed but slight confirmitory evidence that the general data taken are the original and veritable ones used.

§ 68. There is another numerical value, having an elemental value, closely related to that of A C, in § 64 (2.)— viz., 53.05162, say, feet = 636.61944498 inches ; as to which something is to be said in the way of its application to the vertical height of the descending passage-way, *as an inch value*—viz., 53.05+ *inches*, to the breadth of the same,

and to its height perpendicular to the floor line; of which hereafter. The half of 636.6194+, or 318.309722+ inches, is a diameter value to a circumference of 1000. This is more noticeable since 100, the height in feet of B D, is a circumference to a diameter value of 31.830972+, and 31.830972+ × 12 = 381.9716+, or the value of the half base side of the pyramid in feet, which is a diameter value to a circumference of 1200. Somewhat in this connection, the length of the line A B of 343.7745+ is just equal to 10 times the length of the actual measure of the king's chamber, or an enlargement on the standard of 34.3533+. The number 343.7745+ is a diameter value to a circumference of 1080. Taking this as feet, then, reduced to inches, or 4125+, it becomes a diameter value to a circumference of 12960 inches, which number 1296 is the number of square inches to the square yard British.

§ 69.   There is something strongly confirmatory as to the location and length of the floor line of the descending passage-way, as given, if there are showings to confirm the fact of the distance from the foot of that passage to the central axial line of the mass, being, as taken, 32.42377+ feet.

(1.)   One justification of this is in its connected use with the length of the top line of the horizontal subterranean passage-way to the subterranean chamber. Now, the above length can be taken at 324.2377+ *tenths* of feet; the length of the said top line is given by Col. Howard Vyse at 27 feet. This, in inches, is 324. So that, by comparison, the distance along the top line *to the subterranean chamber* is 324 inches; the distance along the bottom line to *the central vertical axial line* of the entire mass is 324 tenths of feet. The variation from the exactitude of comparison is .0198 of a foot (for 27.0198 feet × 12 = 324.2376 inches)—an amount so small that it may be that this was or is included or embraced in the measure of the top line. Right here, too, it will be remarked, by reference to the table § 53 (*b.*), that 324 is a circumference to a diameter of 103.132+, which, in inches, is the half width

of the king's chamber, as enlarged on the standard, or the
enlargement of 5 *cubits;* as, likewise in § 55 (*a.*), it is
seen to be circumference to the base of the ideal pyramid
placed in the sphere (enlargement on the standard being
made).

(2.) There is another harmonic relation, which seems
to place the location of these lines and limits beyond ques-
tion, and thus to close these lines as located. The bare
showing of the relations serves to confirm the purposed use.
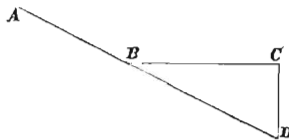
The floor line of the descending passage-way, as shown,
    from A to B, has been stated to be   343.7745+ feet.
From B to C, the vertical axial line is   32.4237+ "
It seems evident that the use of 343.7745 is a use in con-
nection with the half base side of the pyramid enlarged,
or   381.97166+ feet,
as shown in § 64 (6), and § 70.
With B C, find the length of B D, or A B protracted to D,
the vertical axial line of the pyramid ; then B D =
    36.22189 feet.
Now, if the value 381.97166+ is in contemplation in the
use of this floor line, add A B and B D together, to see
what is wanting to make up the distance   381.97166+
and so—   (1.)   343.77450
        36.22189
        1.97527
        ————
            381.97166
The deficit is seen to be   1.97527 feet.
But, instead of summing up the *total lengths*, take the line
B D alone, which is the hypothenuse to the distance B C,

or the measure 32.4237+ feet in question, and to it add
the surplus required, or deficiency, 1.97527—

$$(2.)\quad 36.22189+$$
$$1.97527+$$
$$\overline{\qquad 38.19716+}$$

and here, numerically, is the *same value* as obtained by
adding the totals. Here, 38.19716+ feet is obtained, which is
just the $\frac{1}{10}$ part of 381.9716+ feet. The harmony is such
that it is thus deemed conclusive that the floor line of the
descending passage-way, as to length, and as to its location
relatively to the exterior slope line and to the vertical axial
line of the structure, has been taken agreeably to the men-
tal conception of the architect. In the final closing of the
lines of the interior works, this, it is thought, will be con-
firmed.

§ 70. *Note to above.* The distance from the foot of the de-
scending passage-way floor to the center of the pyramid, is stated
at, numerically, 3242377+. There are very strong reasons in the
harmony of relations, going to show that this is the exactitude
intended ; indeed, it seems to force conviction to that effect upon
the mind. Whatever other uses, or interpretations, may have
been ascribed to the pyramid numbers, there certainly seems to
have been a wonderful play upon them. Take 381.97166+ ; the
half base side of the pyramid ; deduct from it the length of the
floor line of the descending passage-way—viz., 343.7745+ ; and
the remainder is 38.197166+, simply showing that this floor line
is just the value of half base side *less one-tenth*, $\frac{1}{10}$, of itself. If
from E, § 64 (1.), 343.77+ be measured toward the center of the
pyramid, there will remain next to the center a distance of
38.197166+feet. Besides this, this 343.77+ is just ten (10) times
the numerical length of the king's chamber ; and in this connec-
tion, especially for the purpose in hand, the height of the king's
chamber is another play upon this value—viz., 19.098583+ feet.

But to the present purpose of showing some possible uses of
324237+, which may help others in this study.

(a.) Construct a pyramid out of the original Parker elements,
which shall be in the proportions of the one in question : the
height will be 6561, and the base side will be 5153 × 2 =: 10306.

If this pyramid be placed *in a sphere*, the axial line of the pyramid—that is, its vertical axial line, or 6561—to become the radius of such a sphere must be extended until its length becomes 7327.658816+. If this value be divided by 20612, the quotient will be 355.5045+. 7327.+ being in inches, divided by 20.612, the quotient, or 355.+, is in the value of cubits. Take the height of the king's chamber, and to its numerical value add this quotient as follows :

$$
\begin{array}{r}
19098583+ \\
355504+ \\
\hline
19454087
\end{array}
$$

Divide this sum by 6 and the quotient will be 3242347+.

(*b*.) But, again, the enlargement, so much used throughout the pyramid works, on the cubit standard value, in inches of 20.612 is 20626.470017+. This $\times \dfrac{16}{9} = 330023.520272$; and this divided by 20.612 = 1779.0248, as the enlargement of the standard cubit value of the circumference of the pyramid—viz., 1777.777+. One-fifth $\left(\dfrac{1}{5}\right)$ of this enlarged value 355.8049, is the enlargement on the corresponding division of 1777+ divided by 5, or 355.555+. Now take, again, the numerical value of height of king's chamber, and add this enlarged cubit value to it—

$$
\begin{array}{r}
19098583 \\
3558049 \\
\hline
19454879 ;
\end{array}
$$

and the one-sixth $\left(\dfrac{1}{6}\right)$ of this is 32423979.

(*c*.) Take the mean of the resultant values in (*a*.) and (*b*.) :

$$
\begin{array}{r}
32423979 \\
3242347 \\
\hline
2 \mid 64847449 \\
3242372+.
\end{array}
$$

Compare with this the numerical value of the distance from B in § 66, to F, or 32.42377+ feet. The difference seems to be 5 | 100000 of a foot.

On the face of the workings of the numbers, with their seen relations—viz., (1.) to the value of the circumference of the pyramid, and (2.) to the extension of the axial line of the same to obtain the radius of its containing sphere, and (3.) to this shown o be related number down in the subterranean, as it were toward

the center of this sphere : add to these the general marvelous ac
curacy of adjustment of the various measures through which this
measure is attained, with the best measures of these various parts
with the angles of direction ; and, again, that these are every one
of them Parker and pyramid elements.   This done, the effect on
the mind is strong that the measures taken, with their uses as
shown, determine the location of the central axial line of the
pyramid, agreeably to the mental conception of the architect.   It
must be observed, however, that this very number may have va-
rious uses, agreeably to the wonderful interplay of these pyra-
mid numbers at every turn.

One thing further is worthy of consideration—viz., the differ-
ent lengths of lines, or measures, of rooms, passage-ways, coffer,
and, by inference, of the whole mass of the pyramid, raising a
system of variations, very minute it is true, but nevertheless,
pointing to a system of recognition of variations on some stand-
ard or standards.   Agreeably to this, all the above results might
have been in contemplation, as the difference, or variation, be-
tween 32.42347, 32.42397, and 32.42377 could not possibly be
given in any mechanical work ; for the differences .00047, 00097,
and 00077 of a foot are inappreciable.

SECTION VII.

THE DESCENDING PASSAGE-WAY IS SET OFF TO THE EASTWARD
    OF THE VERTICAL AXIAL LINE OF THE PYRAMID A DISTANCE
    OF 24.42190 FEET.

(§ 71.)   The mouth or entrance of the descending
passage-way is upon the north face of the mass ; and while
its end or foot terminates at a distance of 32.4+ feet to the
north of the center, the whole passage is set off to the
eastward of the same center.   Agreeably to the estimates
of Col. Vyse, this descending passage-way, as to the cen-
ter longitudinal line of its floor, is set off from the vertical
axial line of the pyramid a distance of 294 inches, or 24.5
feet.   Col. Vyse must have taken this measure of 24.5
feet relatively to his estimate of the length of the side of

the base, which was 764 feet. Corrected at 763.9432+ feet, which is supposed to be the exact measure intended, works a correction on 24.5 feet, as follows : 382 — 381.- 97166 = .0284, to be deducted from 24.5 feet, leaving, as the corrected distance, as Col. Vyse must have made it, had he used these data, the sum of 24.4716+ feet.

It appears that the passage-way was set off to about this distance, as designative of the final difference of 216330, obtained by placing the pyramid in its standard dimensions in a sphere, as already set forth. As this number has been shown to be instrumental in giving one value, toward the center, of 32.42347, so it appears, likewise, by use of the same numerals, but under another form, to fasten the location of the other distance from the center.

(a.) The radius of the sphere in which the pyramid was placed was shown to be 7327.6588172+, which, re- duced to feet, is 610.63823+. From 7327.6588172+, there was taken the difference of 216330, as an elliptical prop erty. It seems that this number, as such, was preserved intact (on different scales of measure), and was deducted from 610.+ as follows :

(1.)   610.63823 — .216330 = 610.42190 feet, leaving a base of calculation regulating several governing measures of the interior works.

(b.) Let the pyramid inclosed in a sphere be taken at the standard height—viz., 486 feet. Add to this the depth of the floor of the subterranean passage-way of 100 feet, below the base of the pyramid. The sum will be 586 feet. Let it be taken that the intention was to use these values so that a mark would exist in the works, that this process had been gone through (a.) (1.) From the 610.42190 feet take the 586 and it will show the distance from the top of the pyramid, taken from the radius of the circle, less the amount of the ellipticity shown, or 216330, thus :

(1.)   610.63823 — 586 + .216330 = 24.42190 feet. Thus showing the bottom of the subterranean passage-way to be above the true center of the sphere a distance of

(2.)   24.42190+ .216330 = 24.63823 feet.

(*c.*) From the center axial line set the central longitudinal line of the passage-way off this distance of 24.42190 feet, as indicating the above process, and let this be the fixed limit line for the interior works. By Col. Vyse's measures as corrected, this limit line is shown to be fixed at 24.471+ feet from this axial line. By comparison, then,

Col. Vyse's distance, 24.471+
By above,   24.4219
Difference,   .0491

or $\frac{6}{10}$ of one inch ; an amount to be allowed as his error of measure, provided the assuming the above distance be supported as correct by other showings, in related measures.

While, therefore, the foot of the descending passage-way has been shown to be distant from the vertical axial line of the pyramid, to the *northward* 32.42347+ feet, the same, from calculations growing out of the like governing data, is assumed to be set off to the *eastward* of the same axial line

24.42190+ feet,

as indicating the geometrical conditions, or relations, made by placing the pyramid in a sphere; modified by the rejection of the value .216330.

SECTION VIII.

THE DIMENSIONS OF THE DESCENDING PASSAGE-WAY.

§ 72. The question as to the dimensions of the descending passage-way may now be taken up. It has been seen that all the measures of the structure have their origin in the relation of circumference and diameter values of a circle It would be exceedingly appropriate that in the act of entering the passage-way, one should, as a matter of fact, enter through the actual expression of those values. Such seems to have been the case.

Col. Vyse's measures of this passage are :
   (1.) Breadth,   41.5
        Height perpendicular to incline, 47.0

Professor Smyth's measures are grouped together, as means of a series, and are as follows :
   (2.) Breadth near bottom, 41.61 to 41.46 inches.
             "   top,   41.63 to 41.41   "
      Mean of all,   41.53   "
   (3.) Height perpendicular to incline :
      West side of floor, 47.16 to 47.30 inches.
      East side of floor, 47.14 to 47.32   "
      Mean of all,   47.24   "

But he characterizes this measure as 47.3 inches.
   (4.) Height vertical to base of pyramid :
          In one   place, 52.68 inches.
          In another   "   52.36   "

There seems to be very little, if any, difference between the dimensions of the descending, and of the ascending, passage-way ; and, as the red granite portcullis blocks seem to have been intended to give these measures, it is well to give Professor Smyth's measures of the same—viz :
   (5.) Height perpendicular to incline,   47.3 inches.
      Breadth,   41.6   "
      Height vertical to base of pyramid, 53.0   "

   (a.) In § 64, the point A being the intersection of the floor line of the descending passage-way, is in vertical height above C, 31 cubits, or 53.24766+ feet; while E C is 41.82064 feet.   Attention was called to a numerical value very near to this height line—viz., 53.05162, say, feet. Had the value been this last one, its meaning would have been a very peculiar one, for, in inches, it is 636.61944+, and the half of this is, numerically, 318309+, or the value of diameter to a circumference of *unity*, or *one*.

Take the proportion (see diagram, § 64) :
(1.) (A C : E C), or 53.2476 : 41.8206 :: 53.05162 :
                                         41.6666+ ;

and here in the last terms are to be found the vertical height, and the breadth of the portcullis blocks, (5.) above,

as given by Professor Smyth, in the scale of *an inch to the foot;* and a minute change upon the dimensions of the descending passage-way, as given by him.

It must be noticed that the vertical height of the passage is simply dependent on the accident of its angle of elevation, and that angle being 26° 28′ 24″ 10, for a vertical height of 53.05162, the height of the passage perpendicular to the incline must be 47.48771+ inches, instead of 47.16 or 47.32, the extremes given by Professor Smyth; showing thus a difference of $\frac{16}{100}$ of an inch on his extreme.

(*b.*) If it is as stated by Professor Smyth, that there is throughout the works the exhibition of two sets of measures through biased lines, let it be taken that while there is in the dimensions of this passage-way the relation of circumference of *one* to its diameter, as seen, it was intended to display the reverse relation, also, of circumference to a diameter of *one*, then :

(1.) 3·14159+ × 2 = 6·283184 ÷ 12 = 52.3598+ feet.
And, carrying out the proportions—
(2.) 53.0516+ : 47.48778+ :: 52.3598+ : 46.8684+ ;
in which the last term is the height perpendicular to the incline.

(*c.*) Suppose *both* of these measures to have been inferred by the exhibition of their *mean* values, then there results the use of two sets of measures, as follows :

(1.) Height vertical,   53.05162   52.3598
        Height perpendicular to incline, 47.48778   46.868
        Breadth,   41.66   41.1
of which the mean would be—
   (2.) Height vertical,   52.7057 inches.
          Height perpendicular to incline, 47.1778   "
          Breadth,   41.39   "
The measures of Professor Smyth give like values, as—
   (3.) Height vertical,   52.68 to 52.36
          Height perpendicular to incline, 47.16 to 47.32
          Breadth,   41.41 to 41.61
where, in 52.68, 47.16, and 41.41, this set of mean values,

had it been intended, would hardly have been more nearly measured than thus shown.   It is worthy of notice, too, that the portcullis blocks are in the color of the king's chamber, which, in its height, is a diameter to a circumference of 60, the base of 360°, or time measure.   Now, the measures of these blocks, as given, denote, in 53.0, the relation of diameter to a circumference of *unity*—the very change on which the king's chamber height is founded.

There is much to be said in favor of these results.   They grow out of each other, and are proportional to the pyramid relations A C : C E.   In doing so, they involve three relations of dimensions in this passage-way, and develop each relation, as it has reference to the actually measured one, with the accuracy seen.   Besides, *the germ* of the measures is in perfect harmony with the use of all the measures used in and about the structure ; and gives the *unit* values of diameter and circumference of 1 : 314159, and of 1 : 318309 as relations, which, for extended cosmical uses, are used in the integral forms, 6561 : 20612, and 113 : 355.

(*d*.)   There is a very strange coincident, and real natural relation, which goes very far to support, not only what has been said, but serves to strengthen the general scheme as to the use of the pyramid measures, as co-ordinating *time* and *distance* values.   This 53.05126+ feet, or 636.-61944+ inches, shows the relation of—

$$(1.) \quad 636.61944 \div 2 = 318.309+,$$

or of diameter to circumference of 1000, or of *one*.   Take the received value of *the earth's equatorial diameter in miles*, or 7926.6789+ miles.   *Square* this value, and there results 62832238.3837+ miles *in area*.   Divide this, as in (1.) above, and there results—

$$(2.) \quad 62832238 \div 2 = 31416119.$$

Compare this result with the relation of circumference to a diameter of unity as an abstract one—

$$(3.) \quad 3141611 - 3141594 = 0.000017,$$

and this shows an amazing relation between the square of the earth's equatorial diameter in miles and the abstract relation of diameter of *unity* to its circumference, the exacti-

tude being included in the variation of the measure of this passage, or between its limits. Take it the other way, with Parker's ratio of circumference to diameter of unity, and $\sqrt{31415942 \times 2} = 7926.565+$. While this is so, as has been seen, the other relation of circumference as *one* to diameter as 318309 was made use of to raise from 6 the value 360°, or the measure, geographically, of this self-same equatorial, as to its circumference, to make it co-ordinate with solar time value on the celestial circle of 360°. So, it thus seems that the above processes were likely used as recognizing and making practical use of these relations.

On assumption, then, with this showing, the measures of this passage-way are taken *for a mean value* of, for

Height vertical,   52.7058 inches.
Height perpendicular to incline, 47.1778   "
Breadth,   41.39   "

and it will be seen that this intention was carried out.

(*e.*)   It is necessary to obtain some of the above dimensions before one can make any study of the works connected with the ascending passage-way, as to their relations to the descending passage-way, and to the mass of the pyramid.

The fact of the dimensions of the descending passage-way being constructed on biased lines, the *mean* of which are given above, might be accompanied by a biased condition of the ascending passage-way ; so that a choice as to elevation of the foot of the ascending passage-way, could be made between the extremes of 46.868 and 47.4876, the mean being, as has been stated, 47.1778.
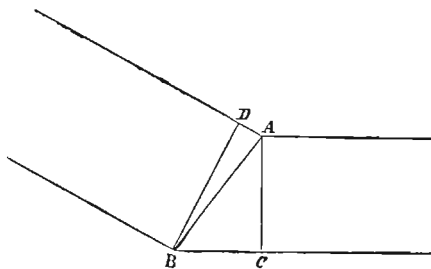
For connection of the upper works, the perpendicular

A C, from the roof end of the descending passage-way to
the floor of the horizontal passage-way to the subterranean
chamber must be had in its measures. Let the values of
the lines in the diagram be as follows :

(1.)   B D, Height perpend. to incline,   47.30836 inches.

(2.)   A B, parallel to slope line of pyr., 48.30736   "

(3.)   A C, perpend. to horizon. passage 37.9908   "

A reason for this becomes manifest. Take the two rela-
tions of diameter of 1 to a circumference of 314159, and
circumference of 1, to a diameter of 318309. Their sum
is 632468, and their *mean* value will be

$$316238.$$

37.9908 inches, ÷ 12 = 3.16590, showing a difference of
.00352 of a foot, to verify all that has been said. The
use then is the mean of the abstract values stated × by 12.

SECTION IX.

LOCATION OF INTERSECTION OF FLOOR LINE OF ASCENDING
PASSAGE-WAY, WITH THE ROOF LINE OF DESCENDING PAS-
SAGE.

§ 73.   The dimensions of the descending passage-way
give the *mean* measures,

Height vertical,   52.7058 inches.

Height perpendicular to incline, 47.178   "

A variation on the last of these measures, to locate the as-
cending passage way, is taken at

Height perpendicular to incline, 47.3083 inches.

(Professor Smyth's measure,   47.3000)   "

Having these data, the next step in order is to ascertain
the point of intersection of the floor line of the ascending
with the roof line of the descending passage-way.

(*a.*)   The author found a point in common between the
measures of Colonel Vyse and Professor Smyth of the de-

scending passage-way; which point turns out to be of importance as to the location of the ascending passage-way.

Colonel Vyse commenced his measures from B, giving the total length B D at 3850 inches. (The edge of the
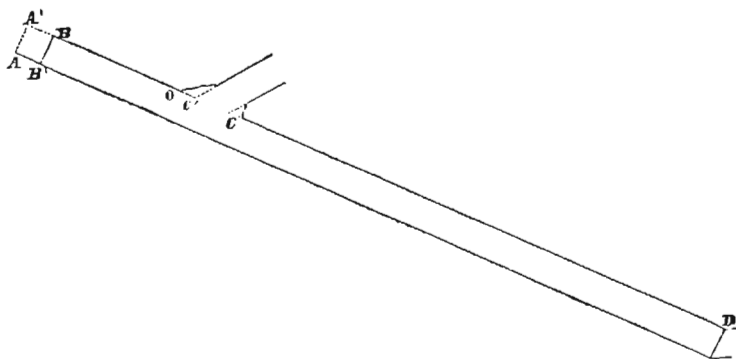
roof stone B, is a broken and an uneven edge, and for a finish may have projected beyond its present face). From B, he says, to the junction of the first ascending passage-way is 758 inches. Professor Smyth measuring from A, gives A B′ at 162.3 inches, then from A′ to C′, that is, "from basement beginning to joint 18 situated up in a hole which is the continuation of portcullis blocks," (or of the upper line of the ascending passage-way), "of first ascending passage-way, and in their inclined line," 981.9 inches. C′ is at this point, or joint. Then from B to C′ by Mr. Smyth, is 981.9 — 162.3 = 819.6 inches. He gives the distance from O, or joint 17, to C′ as 60.0 to 60.3, inches; then from B to O is 819.6 — 60.2 = 759.4 inches. Take it so, 759.4 inches.

It is to be seen that the point O is at the junction, and Colonel Vyse says it is distant from B, 758 inches. This seems to raise a common objective point of measure for these gentlemen, with a difference of 759.4 — 758 = 1.4 inches; which perhaps may be accounted for in their points of beginning to measure, respectively.   It is from these data

that, it is thought, the location of the point C can be recovered.

Colonel Vyse gives it, B D — B O = 3850 — 758 = 3092 inches = O D.

This last result suggests, at once, a Parker (and pyramid) measure—viz.,

Standard circumference, 2061.2 inches.
Increased by its one-half, 1030.6 "

Together, 3091.8 "
By Colonel Vyse, 3092.0 "

Difference, .2 "

or $\frac{-2}{10}$ of one inch, in this many thousands of inches.

Let it be taken that this measure of 2061.2 + 1030.6 = 3091.8 was intended, as in inches, for the distance from O to D. Professor Smyth gives the value O C' at 60.2 inches, or 5.01 feet, and the distance C' C measuring from the basement beginning, at 1022.2 — 963.0 = 59.2 inches, or 4.933 feet; or O C' + C'C = 60.2 + 59.2 = 119.4 inches; or 5.01 + 4.933 = 9.943 feet. Then for the distance C D,

3091.8 — 119.4 = 2972.4 inches,
or, 247.70 feet.

By calculation, Colonel Vyse's measures of this distance would have been, 247.71 feet.

Let the distance C D, then, be taken at, 2972.4 inches, or 247.7 feet.

Floor line of ascending passage-way, with relation to the base of the pyramid, to the levels of the queen's and king's chamber, and to the vertical axial line of the mass.

(b.) From data obtained

A C = 247.70 feet.
Angle B A C = 26° 28' 24"1
" A C B = 63° 31' 35"9
" B = 90°
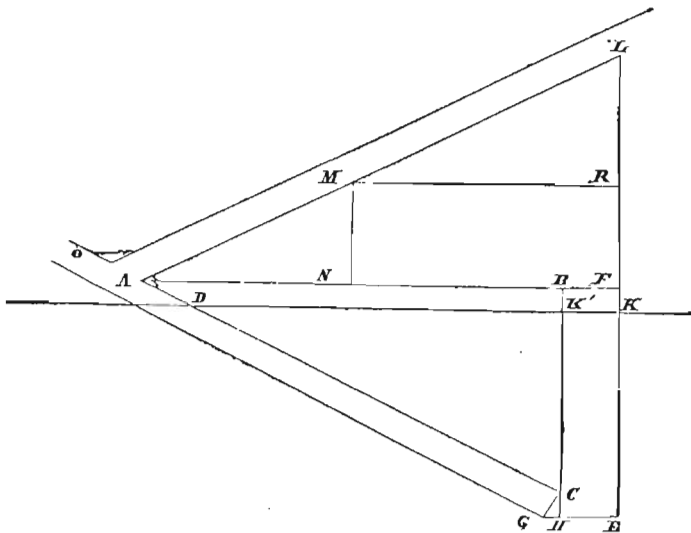
Then A B will equal   221.726871   feet,

   "   B C "   "   110.419458   "

C H (§ 72, e, 3,) 37.9908 inches =   3.16590   "

Then C B + C H = B H =   113.58535   "

NOTE.—To get B C and A B, there are proportions to be found in § 64: for there A C + D B = 153.2476, and A B = 343.7745. Now, A C being given at 247.70, and being part of the same lines, we have the proportion,

     343.7745+ : 153.2476+ :: 247.70 : 110.419458 feet, and, 343.7745 : 307.7272 :: 247.70 : 221.726871 feet.

But, from H to K′, the base of the pyramid, is 100 feet, as has been taken; then, B H — H K′ will equal B K′, or the vertical elevation of the point A, or intersection of the floor line of the ascending with the roof line of the descending passage-way above the base.

This distance, or B K′ = 113.5853 — 100 = 13.5853+ feet.

(*c.*) For the measures of the lines in the diagram, connected with the ascending passage-way, reliance is had on the measures and results of Professor Smyth. His care and painstaking, one may say, even increased, as to the accuracy of his measures, as he ascended. Very great re-

liance is evidently to be placed in his results, even to hun-
dredths of inches.   He gives, as elements to work by—

(1.)   The distance A M of the floor of ascend-
    ing passage,   123.683 feet
The angle N A M =   26° 6'

(2.)   The distance M L of length of grand
    gallery floor line, to where it strikes the
    south wall of same,   156.9 feet.
The angle L M R,   26° 17' 37"
From these angles, A M N =   63° 54'
and M L R =   63° 42' 23" ;

and, with these angles, the following are the values of the
lines :

        (3.)   A N = 111.071 feet
               N M = 54.413 "
        (4.)   M R = 140.666 "
               L R = 69.502 "
  (d.) A N + M R = 111.071 + 140.666
      = A F =   251.737   feet

C H, taken at 37.9908 [§ 72 (c.) (3)], G H
    will be 29.8379 inches, or, in feet,   2.48649 "
The distance from G to the vertical axial
    line of the pyramid was   32.42377 "
Deduct G H,   2.48649 "
equals from, say, H or B to the axial line, 29.93728 "
or A B + this distance = 221.726871 +
    29.93728 =   251.66415 "
A F has been shown to be   251.737   "
Difference,   .073   "

or $\frac{7}{100}$ of a foot, to which distance A F is made to project
beyond the vertical axial line of the structure ; or this ap-
proximation would go to show that the south wall of the
grand gallery and the vertical axial line were in common,
because so slight a variation was hardly to be intended.
At any rate, this is considered to have been the case, from
the showing.

(c.) Take the vertical distance of L, on the south wall of the grand gallery, above the base of the pyramid—

(1.) L R =   69.502 feet
      N M =   54.413   "
      B K' to base of pyramid = 13.5853   "
      or a total of   137.5003   "

as the height at which the floor line of the grand gallery strikes the south wall of the same, above (vertically) the base of the pyramid.

Take 4 times the length of the king's chamber, or 34.3774+ × 4, and it is equal to   137.50980 feet

Compare these results—

      L K on the diagram,   137.5003   "
      4 times the king's chamber length, 137.5098   "
          Difference,   .0095   "

or 9 | 1000 of a foot.

It may be taken, then, that the intention of this height, as to what it should be, was, that it should be four times the length of the king's chamber, as enlarged on the standard, or four-tenths the length of the descending passage-way.

This value has already been referred to; for 137.5097+ feet, are 1650.1176 inches, and this value is a diameter to a circumference of 5184, or the characteristic value of the solar day, which is 5184-000′″. Here we can see a linking together of values; for the dimensions of the descending passage-way, are of a nature that seems to bear relation to the square of the earth's equatorial diameter; and they are so framed, and located, as to give this vertical height, of a diameter of a solar day value. *A result of this kind, fitting so accurately to the uses of the Parker forms, fully compensates for the detailed trouble of arriving at it.*

SECTION X.

ABSTRACT GEOMETRICAL ELEMENTS.

§ 74. As all of the elements of measure indicated are seen to spring from the use of one geometrical problem, it is necessary to group the results springing from that problem, as applicable to these various locations, together.

(*a*.) The discovery of an enlargement on the standard measure, that is, standard 20612, enlargement 20626.-470017 (§ 43, § 51, § 54), growing out of a principle—viz., to obtain from 20612, circumference, to 6561, diameter, the formula—

$$(1.) \quad 20612 : 6561 :: 1 : 3183097224917,$$

by which there is obtained a circumference of *unity*, to a diameter of 318+, becomes of greatest consequence in the construction of the pyramid. The application of this enlargement on the standard has served, as shown, to develop the measures of the king's chamber, with other features; and now, in connection with a geometrical exhibition, it will serve to bring out the various relations indicated at the heads of this section.

(*b*.) The standard base of the pyramid is 763.4074074+ feet. 31.8309722491+, the numerically new diameter value to a circumference of *unity*, if multiplied by 24, = 763.943333980+ feet, as the enlargement on the standard for that base side. Take the standard measures of the pyramid, viz., height 486 feet to base side 763.4074, and find, with these, an *extreme*, of which 486 is a *mean proportional*, as follows :

$$(1.) \quad 763.4074+ : 486 :: 486 : 309.3970502,$$

and represent this geometrically, where, as per diagram, A D = 763.4074+, D B = 309.3970502, and C D = 486. It is seen that the diameter of the circle to represent this mean proportional is 763.4074 + 309.397 = 1072.80445+ ; and the radius is 1072.80445 ÷ 2 = 536.40222+ : and these measures are in reality a commingling of standard and en-

largement; for the proportion is of the same nature with (1.) in (a).
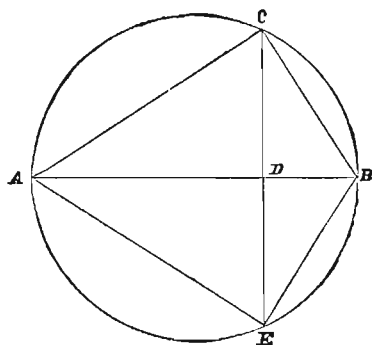
Length of King's Chamber Level.

§ 75. Let A be the edge of the great step, in the upper and south end of the grand gallery ; A B, the passage-way level to the king's chamber, and B C, the width of the king's chamber.

It has been shown that the width of the king's chamber is an enlargement on the standard of 17.17666+ feet, or ten cubits, and is 206.2647+ inches, as enlarged on 206.12. Professor Smyth gives the measure A B as 330.3± inches. Add the two lengths : 206.2647 + 330.3 = 536.5647 inches. Compare this with the radius value above :

Radius value,   536.40222 inches.
This level length,   536.5647   "

Difference,   .1625   "

Consider the king's chamber width as used for this purpose at the *standard*, and then add the lengths 206.12 + 330.3 =   536.42   inches.

Radius above, 536.402   "

Difference,   .018   "

These correspondences are thought to show the origin of this line.

Note, that if this .018 of an inch is taken as the correction of 330.3, as 330.282 inches, then we had the equatorial diameter of the earth as $7926.9268 \div 24 = 330.2886$, thus showing a wonderful exactitude of relation. $330.2886 — 330.282 = .0066$ of *one inch difference*. This is a very strong corroboration of the truthfulness of all the measures taken *as checked by this result*. As seen, this result is the half the *equatorial diameter* of the earth, *as radius*, divided into 12 parts ; showing a measure of time and earth distance relations. How exquisite and exact this is, in connection with the Hindu system, displayed in the king's chamber, for working out *sines*, *cosines*, *tangents*, *co-tangents*, and *planetary orbits!*

Elements of Dimensions of Queen's Chamber.

§ 76. This geometrical form gives also the grand outlines of the queen's chamber. The form contains, as seen (§ 74), the standard elements of measure of the outside shape, and this outside was clothed in *white* as a color. Now, the queen's chamber is in *white*, in contrast with the king's chamber, which is in *red*. The white of the queen's chamber may, then, indicate a relation coming from the same source or elements with the measures of the exterior. Take it that this is so, and that the *angle of the roof* of that chamber is but a copy of the geometrical form and angle C B E, § 74. The angle C B E $= 57°$ 31' 06".3 $\times$ 2 $=$ 115° 02' 12".6, and this is taken to represent the angle of the roof of the queen's chamber. The line C E corresponds with the north and south length of the room, and Professor Smyth gives this length—

On the *cast side*, at 206.5 to 204.7.

On the *west side*, at 206.0 to 206.3.

These but serve to indicate the real measure of 206.12 inches, as a radical standard measure. There is given, then, the length C D $=$ 103.06, and the angles C, D, and B, to find the lines D B and C B ; and these are—

(1.)   D B $=$ 65.5766 inches.

C B $=$ 122.108   "

As this is but a reduced form of the geometrical problem, then—

(2.)   309.397 : 65.5766 :: 763.4074 : 161.803,
and the circle of the queen's chamber, thus indicated, would
have a diameter of 161.803 + 65.5766 = 227.379+ inches ;
and, in fact, this does indicate the measured length, east
and west, of this very chamber, for Professor Smyth gives
this measure at—

<div align="center">

On the south wall,   227.4
On the north wall, 226 to 226.5

Compare this measure,   227.379
with Professor Smyth's,   227.4

</div>

Difference $\left(\dfrac{2}{100}\text{-of an inch}\right)$,   .021

Thus the proportionate and basic measures of the queen's
chamber, as to all but the heights from the floor, which is
in the *rough and unfinished* (which seems to show that the
elements of measure as relates to the floor *were not to be
taken into consideration*), become restored in terms of this
geometrical problem, and in the use of the standard meas-
ures (as in contrast with those of the king's chamber, which
are in measures enlarged on the standard), as follows :

(3.) Length of the room north and south,   206.12   in.
   "   "   " E. & W. (one meas.),   227.379   "
   "   of incline of roof,   122.108   "
   Height of room in the gable,   65.5766 "

Not only so, but these measures are all connected to-
gether under one problem, inasmuch as the height line re-
jected as indicated by the unfinished floor, is, yet, set forth
in another element—viz., the length east and west—as
227.379, as the diameter of the circle, of which the extremes
are 161.803 and 65.5766, to copy the form in § 74.   Sub-
ject to the different measures raised by reason of the biased
line, the beautiful harmony and outcome of these measures
from these proportions, seems to stamp them as correctly
taken, agreeably with the basic or standard idea of the
architect.

It is but right to say that there is a serious discrepancy
between the measures of Colonel Vyse and Professor
Smyth as to the measured height of the walls, and of the
gable, or D B distance.   Colonel Vyse gives the total

height at 243 inches from the floor (or from some recognized mark or line above the rough and unfinished bottom).

He gives the distance D B as 66. inches, closely approximating 65.5766, considering the difficulty of obtaining this measure. How he took his measures is not known ; but it is strange that in the number 243 he has hit upon the exact numerical value of the half height of the great pyramid taken at the standard, and $243 - 65.5766 = 177.4234$, which is extremely close to $355 \times .5 = 177.5$, to a diameter value of $113 \times .5 = 56.5$, which is the *foundation measure* of Moses in the construction of the *Tabernacle*. Had these proportions been intended, the gable would have been 65.6, and the diameter would have been 227.46 ; differing from Professor Smyth's by $\frac{.06}{100}$ of an inch—an allowance very readily to be made in the difficult conditions of the room.

(*a.*) (It is well to note here, that in this queen's chamber seems to be the use of the 113 to 355, or Hebrew form, with relation to, or in connection with, the Parker or pyramid relations 6561 to $5153 \times 4 = 20612$. One such relation has just been shown. Great stress is laid in the Bible upon the word for *heel*, occurring as it does in the Garden of Eden, and being the name of *Jacob*, who was the father of the division of the year into 12 and 13 months. Reading the values of the letters of this word which is עקב, and there is 712 (which may also be used as 217). Mark the uses, or one use—

355	:	113	::	712	:	226.63, or 113.31 × 2.
20612	:	356	::	356	:	113.31
20612	:	712	::	6561	:	226.62
6561	:	20612	::	113.355	:	356.115

It thus appears that 712 is a circumference to 226.62 as a diameter. It was shown that 113.+ was a circumference to 36, and that two were used in the Garden of Eden, or $113 \times 2 = 226$. (See § 62 (*a.*), § 86, § 87.) Now, it is most strange that in the Hindu personified representation of this garden, a female is represented as bending the heel of the left foot before and touching the mouth of the pudenda, which of itself is characterized by the number 7, as the female time originating number, and circle of

the week; so, thus 712, or *the heel*, in this use, thus becomes
marked as the pudenda, or a circle of time [§ 92, (*a.*) (*b.*) (*d.*)].
In fact, Hargrave Jennings, in *Rosicrucians*, page 332, says:
" The late Dr. Donaldson has a dissertation upon the word עקב,
Jacob, which is translated ' *heel*,' in Genesis iii. 15. He adduces
Jeremiah xiii. 22, and Nahum iii. 5, and comparing the words
made use of in the original, shows that the ' *heel* ' is a euphem-
ism, as are the ' *feet* ' in Isaiah vii. 20. His exhaustive argument
demonstrates that the part intended to be signified by the word
is *pudenda muliebria*." One value of the words *Garden of
Eden*, as added, is 177, and this is the height with the gable of
66, which Colonel Vyse takes to make up his 243. When Jacob
had his name changed, it was to *Js* (or *Jes*), *R A L*, ישראל,
or 13·213 ; where, from " *J* (or *Jah*), is *heel*," or 712, it now
becomes " *Jes* (or *Jesus*), is 213," which is also the Hebrew
word *head*, or ראש, or " *Jes* (יש, a form of ' *man*'), is *head;*"
and *head*, or 213, is 355 × 6 = 213·0, the form of the first word
in Genesis.)

There is some confusion in the methods employed by
Professor Smyth.   He takes the height of the walls at

<div align="center">

" 182?   184.5? Mean, 183.2
181?   182?   "   181.5
Mean,   182.4 "
</div>

apparently bringing out the value 182.5 × 2 = 365. It is
possible that this was intended as permissible, in a variable
height, or as leaving an open value. Independently of this
he takes the gable measures at

<div align="center">

245.4   244.9 mean, 245.2
244.2   000.   "   244.2
243.9   000.   "   243.9
Mean,   244.4
</div>

which show that there may have been some indication or
mark noticed by Colonel Vyse, fastening him to the meas-
ure 243. Professor Smyth then works out 244 — 182.4 = 62.
inches, for the *gable height*, in place of 66. by Colonel
Vyse.

There is but this to be said, that where the floor is in the

rubble, and evidently uneven, it would seem that a set of measures *on the sides*, averaged, would not be at all a certain measure to be deducted from the gable measures, taken in the *center of the room*, because one is not sure of a *common plane* of measure. Any departure from accurate measuring, however, or from a sound judgment as to probable relations of parts, would be a wonder in the practical labors of Professor Smyth.

Passage to Queen's Chamber.

§ 77.   Bearing in mind that the level of the floor, from the edge of the great step to the king's chamber, comes from the geometrical formula (§ 74) (*b*.), (2.), (see also § 75), and that, by a proportional use of the same, the proportions of the queen's chamber are produced, the following, giving the length of the passage-way to the queen's chamber, from the use of the values in the same problem, seems to have weight.

(*a*.) The number 309.397050 is but an enlargement on the value, as to its kind, of 20612, as follows : Add to the latter the half of itself, and there results, in standard measure–

(1.) $20612 + 10306 = 30918$.

The enlargement on the king's chamber, taken at the standard measure of 34.3533+, was—

(2.) 34.3577450, and this $\times 9 = 309.397050$,

as above.   Then, 309.397050 is but an enlargement on the standard measure 309.18.   The difference is .217050. Raise this difference, thus—

(3.) $217.050 \times 7 = 1519.350$.

If this be taken as 1519.350 inches, it agrees with the length of the passage-way from the north wall of the grand gallery foot to the entrance of the queen's chamber, as follows—

(4.)   Professor Smyth's measure of same, 1519.400 inches.

From (3) above,   1519.350   "

Difference, of an inch,   .05

Hence, it would seem that this passage-way is *seven* times the difference between the standard 30918, and the enlargement on the same of 30939705+, or the extreme of the geometrical problem.

There is a slight confirmation of the fact of 1519.350 being used as a multiple of seven times this difference, in the closing description of the length of this passage, as to its being marked off in certain divisions. Professor Smyth says : " The above measures for length being the mean of two sets, nowhere differing more than 0.3 inch, and having been further tested for the whole length, by a third measuring carried on by rod lengths of 100 inches, may be pretty safely depended on. Hence, whole length of horizontal passage from north wall of grand gallery to north wall of queen's chamber (inches),   1519.4
" One-seventh of the above,   217.1
" South length of passage with low level,   216.1
" North length, without roof, measuring to *mean place* of the two cuts-off in grand gallery floor,   217.8."

It may, then, be taken that the source whence this length of 1519.35 is obtained is as stated ; and that, very likely, it has something to do with seven of the spaces or stripes of the grand gallery.

Heights from Floor of Subterranean Passage-Way to the Gable Roof of Campbell's Chamber.

§ 78. (*a.*) A still further application of this same geometrical problem, it is thought, can be made as to the heights of the various chambers terminating in Campbell's chamber, above the floor level of the king's chamber ; that is, from the gable of Campbell's chamber to the king's chamber level. Upon a careful examination of the angle of the roof inclines of Campbell's chamber, on Perring's plates of Vyse's measures, it measures 115°±, and appears to be the same angle with that of the queen's chamber roof. That they are intended to represent this same angle, is, in a measure, confirmed by the fact that, while the rest of the

chambers, up to this one, are in *red* granite, return is made, in the roof of this chamber, to the *white* of the exterior, and of the queen's chamber. Referring to the geometrical problem (§ 74), it is seen that the angle spoken of is made by use of the number 309397050, which has been shown to be an enlargement on the standard of 309.18, which last is the measure giving rise to the point of intersection of the descending with the ascending passage-way.

Take, now, the standard and enlarged lengths of the king's chamber, and multiply them by 9—

$$\text{(1.)} \quad 34.35333+ \times 9 = 309.18 \text{ feet,}$$
$$\text{(2.)} \quad 34.3774 \times 9 = 309.397050 \text{ feet,}$$

giving these identical values.

(*b*.)   By the Parker time problem—

$$\text{(1.)} \quad 20.612 \times \frac{4}{3} = 27.482666+,$$

which, agreeably to Mr. Parker, "is the exact value of the passage of the moon round the earth over the value of a complete circle, the time being in circular days of 23h. 51′ 23″ 20‴ each (5153·000‴) ; and therefore 27.482666+ × 5153000‴ (the value of one circular day) = 141618181.-333+ ÷ 5184000‴ (the value of one solar day) = 27.-3183220164, which, reduced to the proper divisions of solar time, equals 27d. 7h. 28′ 23″ 1‴ 20⁗, which, I say, is the exact time of the passage of the moon around the earth." To this is to be added 4′ 40″ 46‴, or the difference between one circular and one sidereal day, as shown in § 13.

(*c*.)   Divide the Parker formula by 12, where 20.612 is taken to be in inches, and there results—

$$\text{(1.)} \quad 1.717666 \times \frac{4}{3} = \frac{27.48266}{12},$$

where the first term has become the value of one cubit in British feet, and the last term has become the circular value of $\frac{1}{12}$ of one lunar month.   Multiply by 10, and there results—

$$\text{(2.)} \quad 17.1766+ \times \frac{4}{3} = \frac{274.8266}{12},$$

where the first term, or standard width of king's chamber, has become 10 cubits, and the last has become $\frac{10}{12}$ of one lunation.

Clear of fractions, and there results—

$$(3.) \quad 206.\frac{12}{} \times \frac{4}{3} = 274.8266+,$$

where the first term has become 120 cubits in British feet, and the last has become 10 lunations. (As to the great estimation of the Parker form 20612, raised to the value of 120 cubits, or 206.$\frac{12}{}$ British feet, see Appendix, 111.)

But while this result is so, agreeably to Parker, the standard length of the king's chamber multiplied by 8 gives this very value, or—

$$(4.) \quad 34.35333+ \times 8 = 274.8266+ \text{ feet.}$$

(d.) The standard circumference of the pyramid is 36643.55+ inches to a height of 486 feet. But 366.4355+ is that value which Mr. Parker says is "the exact time of the earth's motion round the sun, over the value of a complete circle in space, the time being in circular days," on which he proceeds to give the exact value of the year in solar time. One-fourth of this 36643.55, reduced to feet, is 763.4074+, the base side of the pyramid; and, by the geometrical problem—

(1.) 763.4074+ : 486 :: 486 : 309.397050, whereby it is seen that this 309.397+ is a reduction of the measure of *solar* time, while 274.826+, or 8 times the length of the king's chamber, is a measure of *lunar* time. It is also seen that while 763. to 486 is in the form of 1 : 314159, 486 to 309.397 is in the form of .318309 : 1.

(e.) Take, then, the following measures for comparison :
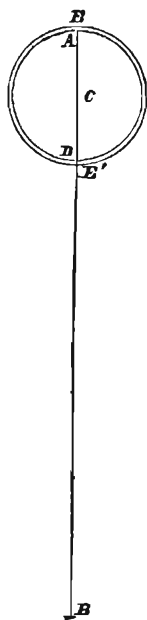
(1.) $34.3533 \times 9 = 309.18$ standard.

$34.3774 \times 9 = 309.397$ enlargement.

$34.3533 \times 8 = 274.826$ standard.

(2.) Let A B $= 309.18$ feet.

Let C B $= 274.826+$ feet.

Then A B $-$ B C $= 34.3533+$ feet, or the standard length of the king's chamber.

With C as a center, and A C, or $34.3533+$, as a radius (see preceding diagram), describe the inner circle A D; then—

(3.) $274.826 - 34.3533+ = 240.4733$,

or $34.3533 \times 7 = 240.4733$.

Now, instead of the standard measure 309.18, make use of the enlarged measure 309.397050; then—

(4.) $309.397050 - 274.8266 = $ C E $= 34.570383+$.

Then, with C as a center, and C E as radius, describe the outer circle E E'; then—

(5.) E E'$= 34.570383 \times 2 = 69.140766$

feet;

and this is taken to equal the height of the gable of Campbell's chamber from the level of the floor of the king's chamber; while E B is taken to be the total distance from that gable to the floor of the passage to the subterranean, by the rejection of the number value of 216330, on which value the entire pyramid works seem to be founded.

A B. Roof of Campbell's chamber to level of king's chamber floor.

B C. Space filled above C.

C D. Distance to base of pyramid.

D E. Distance to subterranean passage floor.

E F. Distance of 2.16330.
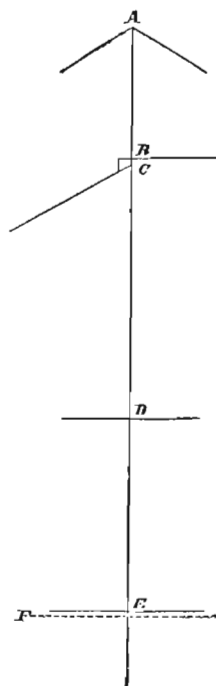
(6.)   From A to F, the dotted line, probably marked in the subterranean chamber, is   309.397050 feet.

A B, as taken in (5.), is   69.140767

B C is the filling of the king's
    chamber level above the
    intersection of the floor
    line of the grand gallery,
    with the south wall there-
    of.   Professor   Smyth
    makes this 7 inches, or
    .5833 of a foot.   Take
    it at   .583183

C D = (§ 73, E) (to base of
    pyramid),   137.509800

D E = (to floor of subterra-
    nean passage),   100.000000

E F = as taken,   2.163300
                                  ———————

                                    309.397050 feet.

Thus it is seen that the detailed measures, as variously found, as to vertical heights, amount in the aggregate to the extreme of this geometrical problem, which is embraced in the angle of 115° (§ 76), and is marked on the diagram as D B (§ 74).   All the values have been worked out and accounted for, *save*, only, the 183 of .583183 for .5833, where $\frac{11}{100000}$ of a foot has been borrowed, or rather taken from Professor Smyth's measure.   What is of the greatest significance seems to be the number value of

                        216330,

to make up the perfect value of 309.39705.

Height of Level of Passage to Queen's Chamber, above
    the Center of the Sphere, in which the whole Pyramid
    is Supposed to have been Placed.

§ 79.   Rejecting 216330 from the radius of the circle [§ 55 (*a.*)], or 610.63823 — .216330 = 610.42190, that radius becomes 610.42190 feet.   From this deduct 586 (the

standard height of the pyramid, or 486, *plus* the distance
vertical, from base of pyramid to bottom of subterranean
passage-way, or 100 feet), and there remains, from the
bottom of the subterranean passage-way to the center of
the sphere (216330 rejected), the distance of, as shown—

	24.42190 feet.
Add the distance from bottom of subterra- nean passage-way, *less the height* of the passage, or 100 — 3.16590, =	96.82530 "
Add from the base of pyramid to the level of the intersection of the ascending and descending passage-ways =	13.58535 "
Add height from this intersection to level of queen's chamber passage =	54.41300 "
Add, as borrowed, one cubit,	1.71766 "
And there results a total of	190.96321 "

or, a wonderfully close approximation to *ten times* the
height of the king's chamber, or 190.98583 feet.

Compare the value   190.96321   "

The difference is,   .02262   "

or, numerically, just one of the lengths of the queen's cham-
ber itself, or $113 \times 2 = 226$.   Let the formula be recalled
from § 35 (3), as follows:

(I.) $113 : 355.0001+ :: 36 : 113.0973+$,

where, as was shown, the object was to get 36, or the factors
$\overline{6 \times 6}$, as a *straight line* value, in place of a *circular value*,
as in the *king's chamber*, where 19.0985 is proved to be a
diameter to a circumference of 60.   Multiply this fourth
term by 2.

(I.) $113.0973+ \times 2 = 226.1946$,

and the above difference is found to be the $\frac{5}{1000}$ of *one.*
It is quite interesting in this connection, as to the dimen-
sions of the queen's chamber, that while its $\frac{1}{2}$ basic length
north and *south* has been shown to be $5153 \times 2 = 103.06$
inches, or *twice* the value of the area of the circle inscribed

in the square, under the Parker forms, in its basic length *east* and *west* it is thus seen to be 113 × 2 = 226 inches, or *twice* the Metius diameter.

(*a.*) The rejection of 216330, and the use of a cubit value of 1.71766+ to produce these singular results, calls to mind a phase of the self-same nature in this strange work. Refer to the diagram, § 55 (*a.*). Take the full radius line of the sphere;

It is	610.638234 feet.
Reject from this	.216330 "
And there remains	610.421904 "
Enlarge this by *one cubit*,	1.717666 "
And let this be a new radius of	612.139570 "

Then making use of the formulation in § 56 (*b.*):

Sin. 81° 51′ 14.″5	9.995595
Sin. 38° 08′ 45.″5	9.790754
Log. 612.139570	2.786850
Log. 381.9517+	2.582009

as the value of the line of 30° to F, to that extent O D″, at which it intersects the slope line of the pyramid. The sine of this as an angle of 30°, is $\frac{1}{2}$, or 190.975+ feet, or .010 of a foot less than ten times the king's chamber height.

Take the values found above, and add them.

$$
\begin{array}{rl}
(1.) & 190.985 \\
& 190.963 \\
\hline
& 381.948
\end{array}
$$

The *mean* of these values is 190.975 feet, or this very result, thus arrived at by another way, but at the same time by use of the same rejections.

(*b.*) This number 216330 becomes again manifested in very important measures—viz., those of the king's chamber level, and those of the base of grand gallery—thus:

(1.) From edge of great step to south wall of the king's chamber (§ 75),	536.402 inches.
(2.) M R on the diagram [§ 73 (*b.*)], or base of the grand gallery triangle, to south wall of same,	1687.992 "
Or a total of	2224.394 "

But there has been in these additions a
    lap of the length of the great step,
    which by Professor Smyth is meas-
    ured at 60.8 to 61 inches.   Deduct
    the larger measure,   61.00 inches.
And the result in inches and decimals of
    an inch is   2163.394   "
or the appearance in this quarter of this remarkable num-
ber.

A Method of placing a Salient Height Line for the Interior Construction of the Pyramid.

§ 80.   Take a line equal to the standard length of the
base side of the pyramid.   On this line raise a square,
which divide into four equal squares.   And, on the base
line, construct the exterior lines of the pyramid.

A B = 763.4074 feet.   Then F'D will equal 381.7037 feet,
as will also A F'.   On A B raise
the pyramid in the standard
measures.   Then   C F' = 486
feet.   At D with $\frac{1}{2}$ the standard
height, or $\frac{486}{2}$ = 243 feet, meas-
ure down to F ; then with the
value 243 for height, draw in
the pyramid D E E', and it will
be, as to its dimensions, reduced
by just one-half from the original—that is, its half base
side, now, will be 190.8513+, on which the enlargement
190.985+ has been shown to play so great a part in the pyr-
amid measures.   By this process, it will be seen that the
works on the E E' level, with these proportions, would be
precisely as if they were located on the base of the larger
pyramid ; while, at the same time, an elevation has been
obtained to work out other results.
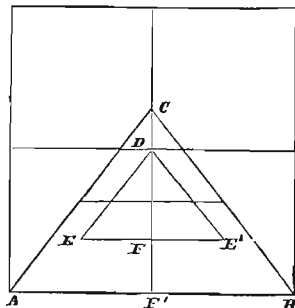
(1.)   In § 73 (c.), the vertical distance from the base of
the pyramid to the level of the true floor of the king's cham-

ber was shown to be four times the length of the king's
chamber taken as enlarged,

or 34.3774 × 4 =   137.5096 feet. .
D F′ is equal to 381.7037 — 243 138.7037   "
Difference in excess,   1.1941   "

In § 73 (a.), to obtain the distance 247.70 feet, from the
foot of the roof line of the descending passage-way to the
point of intersection of the floor line of the ascending
passage-way, we had the primary distance 3091.8, and from
this there was deducted to get the point desired, 119.4
inches, or

$$3091.8 - 119.4 = 2972.4 \text{ inches,}$$
$$= 247.7 \text{ feet.}$$

The distance of the remove, then, of this
    point was by a deduction from the
    primary value of   119.4 inches.
To obtain a like remove to get a particular
    vertical height, as just shown, requires
    a deduction from a primary value, of 1.194 feet.

All which goes to show, that probably all the interior
work of the pyramid, is to be obtained by use of squares,
in their subdivided parts.

§ 81.   It is thought best to close the effort at reconstruc-
tion of the great pyramid at this point.   Many more meas-
ures and harmonies could be shown—as of the coffer and as
of the descending passage-way relations ; but it is thought
that all has been shown that is necessary for this work.
Now, let the reader reflect upon what has been done or ex-
hibited.   (1.) An abstract elemental relation of geometrical
shapes. (2.) A special numerical integral relation is shown,
as applying to the notation and working together of these
shapes.   (3.) With this relation, as connected, it is thought,
with very beautiful geometrical displays, the pyramid
structure, as to its outside and as to its inside works and
measures and proportions, has been reproduced in measure
after measure, little and great, in angle after angle, and in
general relations of parts to parts ; all, so that, one may say,
the results answer absolutely to the *British measures* as

taken.   Surely, then, the diagrams and intentions of the
architect have been displayed and set forth, as to the prac-
tical architectural work.   But, what is more, is that it is
just as certain that his *mathematical*, and astronomical,
and geographical, measuring intents have been disclosed in
a general sense ; and even more than that.   It only re-
mains to discover those curious underlying laws for cosmi-
cal construction, certainly known to him, by which the
cosmos could be so outlined that the sizes and times of
planets could be numerically notatéd, and, by a practicable,
realizable, unit of measure, co-ordinate one with the other.
If this statement is true, then it must be admitted that all
that has been set forth has depended upon the work, and
numerical elements applied to geometrical shapes, of John
A. Parker.

As to what the extent of ancient knowledge really was,
modern opinions are becoming more and more liberal with
increased research.

Mr. Rawlinson, in App., Book II., chap. vii., says : "No one will
for a moment imagine that the wisest of the Greeks went to study in
Egypt for any other reason than because it was there that the
greatest discoveries were to be learnt, and that Pythagoras or his
followers suggested, from no previous experience, the theory (we
now call Copernican) of the sun being the center of our system ; or
of the obliquity of the ecliptic, or the moon's borrowed light, or the
proof of the milky way being a collection of stars, derived from the
fact that the earth would otherwise intercept the light, if derived
from the sun, taught by Democritus and by Anaxagoras, according
to Aristotle, the former of whom studied astronomy for five years
in Egypt, and mentions himself as a disciple of the priests of
Egypt, and of the Magi, having also been in Persia and Babylon.
The same may be said of the principle by which the heavenly
bodies were attracted to a center, and impelled in their order, the
theory of eclipses, and the proofs of the earth being round.
These and many other notions were doubtless borrowed from
Egypt, to which the Greeks chiefly resorted, or from the current
opinions of the ' Egyptians and Babylonians,' the astronomers of
those days, from whose early discoveries so much had been de-
rived concerning the heavenly bodies.   Cicero, on the authority
of Theophrastus, speaks of Hycetas of Syracuse, a Pythagorean,

having the same idea respecting the earth revolving in a circle round its own axis; and Aristotle observes that, though the greater part of philosophers say the earth is the center of the system, the Pythagoreans, who live in Italy, maintain that fire is the center, and the earth, being one of the planets, rotates about the center, and makes day and night. This heliocentric system (having been lost) was finally revived in Europe," etc.

The trouble was that this kind of knowledge was of the *priestly caste*, and therefore was utterly unknown to the world; for this caste, with its power of influence, would discourage any theories tending to the truth, and would, if possible, make any one recant a pretended discovery, if it chanced to militate against the hidden knowledge.

Here, it has been shadowed forth, not only how extensive and valuable this knowledge was, but the very nature and groundwork of the knowledge itself. *John A. Parker's method of quadrature, and his problem of three revolving bodies, evidently did lay at the base of the famous Egyptian and Pythagorean systems.*

Thus the lines of the admeasurements of the interior work of the pyramid, having their origin from the intersection of the floor line of the descending passage-way with the sloping side line of the exterior, *close themselves;* and that so accurately, tested in such various ways, that it seems it can be safely said that this work exhibits the restoration or reconstruction of the pyramid, agreeably, in a general way, to the architectural plan and measures of the original designer—what is left to be discovered being the particularities or minute details of elaboration of his thoughts and measures.

SECTION XI.

PYRAMID SYMBOLIZATION.

§ 82. (*a.*) In terminating this effort at reconstruction of the pyramid, it is well to give symbolic representations, with their

meanings, of its elements. It is seen in § 55 (*a.*), that the orig-
inal pyramid from whence the real pyramid of the Nile springs,
is directly constructed from the original elements of relation of
diameter to circumference of a circle. This is circular elements
one. On the lines of this original pyramid springs another,
whose elements are circle *two.* In § 74 (*b.*), out of the elements
of *two*, another set of elements is obtainable, governing the *in-
terior* work of the pyramid proper; these elements are those of
circle *three.*

The elements of *one* are:

(1.)	Height,		6561	inches,	546.75	feet.
	$\frac{1}{2}$ base side,		5153	"	429.416+	"
	$\frac{1}{2}$ base diagonal,		7287.44+	"	607.28+	"
	Radius,		7327.65+	"	610.63+	"

The elements of *two*, as has been shown, are taken from the
elements of *one.* Whereas, the full circumference of base of one
is $5153 \times 8 = 41224$ inches, or one hundred times the length of
the king's chamber, the circumference of the pyramid proper is

$$\overline{5153 \times 4} \ (= 20612) \times \frac{4^2}{3^2} = 36643.55+ \text{ inches; and on this the}$$

pyramid proper is constructed.

The elements of *two* are:

(2.)	Height,		5832	inches,	486	feet.
	$\frac{1}{2}$ base side,		4580.44	"	381.70	"
	$\frac{1}{2}$ base diagonal,		6477.72	"	539.81	"
	Radius,		6513.47	"	542.78	"

The elements of *three* are:

(3.)	Height,		3712.76	inches,	309.39	feet.
	$\frac{1}{2}$ base side,		2916.	"	243.00	"
	$\frac{1}{2}$ base diagonal,		4123.84	"	343.65	"
	Radius,		4146.60	"	345.55	"

Where these elements are derived from elements in (2.); and
where the height is one of the extremes of the geometrical prob-
lem, § 74 (*b.*)

These are the circles whence the complete pyramid, as to its

outside, and as to its *inside*, is fitly framed, and put together, giving the measures of the heavens and the earth.

The symbol, then, should be of three circles, one within the other, with the *triangular* representation of the pyramid contained, or else a *pentagon*, or the *pentapla* of Solomon ; but the *triangle* would be more pertinent. While the triangle represents the pyramid, the *triangle* and *circle* represent the elements from whence the *plane* measure of *the square*, of the base of the pyramid, is derived.

(*b.*) Now a *unit* of measure is desirable, for translation of geometrical combinations of shapes into their proper numerical equivalents, for working out the co-ordination of *time* with *distance* relations.

While the two sets of values, 6561 : 20612, and 113 : 355, are essentially connected together, and are in some way but variations on each other, so that 113 and 355 carry with them by implication a decimal value, as springing from 6561 to 20612, yet, as they stand, they bear a beautiful *differential* relation to each other, as follows :

$$(1.) \quad 6561 : 20612 \quad :: \quad 113 : 355\frac{1}{6561}$$

$$(2.) \quad 20612 : 6561 : 355 : 112\frac{20611}{20612}$$

In this last formulation, the fourth term is a *diameter* or *straight line* value ; and, as regards 113, is seen to differ from it by just *one unit as a straight line (or diameter value) one, of the denomination of* 20612, *the elements of a perfect circle* or circumference, and this *difference is implied* in the Jehovah or יהוה value, which, as will be seen hereafter, springs from 113. This difference of 1 — 20612 implies the entire pyramid scheme, for a *right line*, as | or —, signifies a solid unit or cube, whose edge is | or —, or *one ; and here the *denomination* of this *one* is 20612, the perfect circumference value, and for original measure taken *as inches ;* therefore, the *straight line one*, or | , is of the value of *an inch* cubed, or is a cube of an inch to the edge. Take off the value of the 20612 onto the edges of this cube, and each edge (there being 12) will be of the value of 1.71766+, which is a reduction by scale of *the cubit* value in terms of the *British foot*. This has been before set forth ; the difference is that here the scale is reduced from the *least unit measure*, viz., that of the inch. This reduced form of subdivision is actually to be found in the *coffer measures* of the king's

chamber, as, for instance, one line of that measure, by Professor Smyth,

<div align="center">is   90.175 inches.</div>

<div align="center">Now, 1.717666+ × 75. = 90.1774   "</div>

where 1.71766 is the cubit value reduced to the scale mentioned.

Thus can be seen the magnificence of the value, because the exactitude of the Jehovah diameter value lays in the implied use, which will derive a *perfect*, yet combined, unit value, which, as seen, is | , as a *straight line* of the denomination of 20612, which is an abstract *perfect circular* and *circular area* value.

(*c.*)   This is shown to have been the case otherwise.   To express this value by symbol, *the picture would be* of | as a straight line and a O as a circle, or, together, 10, which *is the perfect form of one*, and at the same time expresses the value of *ten*, or 10.   With the Hebrews, it is kabbalistically said that *the ten* is *the one*, and *the one* is *the ten*.

" Kabbala says : ' This number 10 is the mother of the *soul*, and the *light* and the *life* are there united ; since the number *one* is born from the spirit (in the New Testament, *spirit* is *John the Dove*, and *John the Dove*, or *Jonah*, *by the fish use*, becomes Jehovah), thus the *unity* (1) has made the *ten* (10), and the *ten* (10) the *unity* (1)." (Hermes xiv., quoted from Sod., p. 57.)

The reason of this definition can be made obvious.   The *primal one* contained all the elements of *generation*, and therefore included the *male idea* and the *female idea* in itself.   Thus, 1 contained | as *a male*, and O (a circle) as *a female*, yet it was, as a primal conception, but *one*.   But these *two*, as separated parts of *one*, arranged together, were 10, or *ten;* therefore, the interrelation of $1 = 10$, $10 = 1$.   But, again, with the Hebrews, 1 was taken by itself, under *another form*, as combining in itself *two*, i. e., it was susceptible of division into *two parts which should make one*, and each of these parts was necessarily $\frac{1}{2}$, or

$\frac{5}{10}$, or .5, which was the letter ה, or the *womb letter*, from whence, the rabbins say, God created all things.   But add .5 and .5, and we have 1 | o, or the *male-female* again, or the *perfect one.* Again, this 10, or the *perfect one*, was denoted by the Hebrew letter י, a sacred letter, denoting the word *Jah* or *Jehovah*, meaning what has been said (among other things) ; for י stands for 1, *the male*, and o, the female.   But o was esteemed (as female) to be equal to the word for a *fish*, *taken as female*, or the letter ה raised

to another scale of value, ‪ג‬, or *n*, or from .5 to .5 × 10 = 5.0, where we have 5 — 0, or ‪ה‬ feminine, and 0 feminine. Now, the letter ‪ג‬, or *n*, was named, and was the word *Nūn*, or *fish*, or ‪נון‬, and *its values* were 565, which word and values are *considered feminine, because raised from a feminine source*. But 565, or *fish*, or *womb* of 5 — 0, or ‪ג‬ (for .5 or ‪ה‬), is equal to 113 × .5 = 56.5, where 113 is *man* (a straight line or phallus value) multiplied by ‪ה‬, or the womb value; and this, as seen, equals ‪נון‬, or *fish*, or 5 — 0. Now, *the equivalent of* ‪נון‬, 565, is ‪הוה‬, or 565, and ‪הוה‬ is the *female* part of the great word ‪יהוה‬, or Jehovah, which thus assumes this *word form as the equivalent for the male-female uses above shown*. But as the parallelism must be maintained to preserve the unity of the God-head, as male-female, and yet its *separated condition*, we have the values, 56.5 × 10 (as a form to show this) = 565, where, by the letter forms, for 565.¹⁰, we have ‪יהוה‬; *yet, after all*, this amounts to 56.5 × 10 = 565, by completing the multiplication, or reproduces ‪הוה‬, or *the phallus is thus concealed in the primal emptiness* or *nothingness*, which is *Bohu*, ‪בהו‬, or *Muth*, mother, ‪מות‬, or Venus, or Eve, i. e., *the primal emptiness out of which reality sprung*. (And *this* concealment is allied to, and in exact harmony with, the same idea in another form, or *word* form, and *number* form combined, for the *flux* word is *Nun*, ‪נון‬, or, in itself, *the female*, as *fish*. This is O, and because its value is 56.5 (113, *man* × .5, *woman*), it is the equivalent of *the same*, with ‪הוה‬, which also equals 565. Thus, ‪הוה‬ *is the female*, by this equivalence; but, being so on its *word face*, it nevertheless *conceals within itself* the value 113 (because 113 × 5 = ‪הוה‬), which is a *straight line* or *diameter* value, or " *man*," and therefore, as opposed to O, *is male*. Therefore, the harmony.) And this shows that the *mother* idea was, *after all*, the *primal one*, and that the Roman Catholic conception *is right*. How exceedingly beautiful the display is. For while we have the full form ‪יהוה‬, as *male-female*, yet it so springs that this form *is evanescent*, as 56.5 × ¹⁰, because, completed, the perfected form becomes ‪הוה‬, or 565, the 10, or ‪י‬, having vanished or *concealed itself*.

(*d.*) Then, here, we have *man* = 113 diameter (*phallus*) to a circumference of 355, multiplied by .5, or womb = ‪הוה‬, the female part of Jehovah; and this, as 56.5 (or *fish*, ‪נון‬) multiplied by 10 equals 56.5 × 10 = ‪יהוה‬, *the great name*, which, after all, is 10, or *primal one*. As seen, when 113 : 355 is compared with 6561 : 20612, the *perfect circular element*, we have to

make up the 113, as $112\dfrac{20611}{20612} + \dfrac{1}{20612} = 113$; where the differential is a *one straight line* (*phallus*) *of the denomination of the perfect circle* (*yoni*), or 20612; and this is thus *seen to be necessary* to make the 113. But $113 \times .5 = 56.5$, or הוה; thus, *it is also necessary to make this value:* but $56.5 \times 10 =$ יהוה; therefore, *it is also necessary to make up this value.* But this value is Jehovah; wherefore, the necessity is *a straight line one, of a denomination of* 20612, or the *perfect one,* and *Jehovah* has been shown to be this.

So, while *Jehovah* expresses this *perfect one,* under the Parker forms, through the Metius use it also expresses a larger diameter value, as 565[1], derived from $113 \times .5 = 56.5$, and 56.5×10 (= יהוה) $= 565$, where 113 is diameter to circumference of 355. The involution of the Parker and Metius forms seems to be in the *queen's chamber in the pyramid.*

Besides this, the two words of which *Jehovah* is composed, make up the original idea of male-female, as the birth originator (for the י was the *membrum virile,* and *Hovah* was *Eve*). So, it is seen that the *perfect one,* as originator of measures, takes also the form of *birth* origin, as *hermaphrodite one;* hence, the phallic form and use.

So the perfect symbol is made up of three circles—one within the other—a triangle inscribed, and in this the word יהוה, as *the originating one of all things.*

As I H S, or יחש, or (the values being added) 318+, it would give diameter to a *circumference of one;* and, therefore, I H S is a *Jehovah form.*

(*c.*) It would take up too much space to go into particulars; but it could be shown that the word יהוה should be placed in *the darkness,* around the borders of which an intense light, above the brightnes of the sun, should reside as issuant from the *Word.* (Also, that in the symbol 10, the 1, as another symbol,

may be supposed to represent the word *John*, and should stand
on the *western* or *autumnal* side of the *celestial circle*.)   If, in-
stead of the word, a diameter line is drawn across the circle, this
form, of itself, would be expressive of the *great word*, and thus
the circle, with its diameter line, would again express the number
10.   Another, and very beautiful symbol, might be placed in the
pyramid triangle, viz., that of an *oblong*, or *two squares*, bearing
the form of an open book ; but this is more appropriate, as in-
cluding the *ark of Noah* in the pyramid symbol.   This figure is,
by cutting it in two, the origin of the Hebrew letters ח and ה.
The value of ח is 8, and that of ה is 5.   The number 5 was the
birth number, as its letter ה, its sign, was the symbol of the
womb.   The number 8 signifies *the use* of 5.   In the Hebrew
conception, everything made by the Creator was a *perfect one*,
and by this method was a *perfect cube*, as one.   But birth neces-
sitates the two opposites of male and female, each of whom had
to be in itself perfect. . To combine these two so that the duality
may be preserved, and yet *a perfect one result*, if the originat-
ing cube be used eight times, the result is another perfect cube,
combining the two opposite or separated capacities for produc-
tion within itself.   This is exemplified in the family of Noah.
To make a perfect *productive one*, they had to be *eight;* and so,
in fact, they were, as they entered the ark.   Now, the values, as
applied to Noah, would give us his name as חה (or 8–5, and the
larger cube from 5 would make one of 10 to the side, or a Jeho-
vah cube), whereas it is נח, and for this reason : there is no
change determined on the value of 5 (as ה) by the use of נ or *n*,
because נ *is* 5 only enlarged from ה, in the ratio .5 × 10 = 5.0,
or 5 × 10 = 50.   The נ, or *n*, is used to get the *fish* letter, as
nun, or נון, or 565, the Jehovah form, as shown ; and this, taken
as *a cube*, eight others make up the equivalent larger one, or 10,
or Jehovah.   Showing the Noah glyph to be a Jehovah one, or
Jah-is Noah, or נחי, which is the British inch—that *cubic one*
above shown forth.

   Note that this is of great importance.   Take the origin of נח
in חה ; this, by symbol, is 8 — .5, where .5 is a womb cube ; but
to fructify, it must combine male and female in one ; so it takes 8
to make the next larger perfect cube, whose face will necessarily
be .5 + .5 = 1.0, or a *unit one*.   Jehovah is also *a unit one*.
Then, *Jehovah* and *Noah* are equal, or *one equals one;* and, by
contraction, the expression of this will be י־נח, I-nch, where the
concrete form is " *Jah* (or Jehovah) *is* (or equals) *Noah*," or, to-

gether, they signify *I-nch.* If **נ** is taken for **ה**, this only changes the value by ciphers, which, *instead of enlarging,* can be taken as *smaller subdivisions;* or, in fact, the ciphers may be dropped by Hebrew usage. The pyramid is built on the *British inch,* as shown ; the Garden of Eden, etc., is the expression of the same thing under another style of setting forth. It seems, then, clearly evident that our English word *inch* is, in fact, from the combination of the Hebrew *unit* designations, viz., *Jah* and *Noah,* or **י-נח**, or, literally, I-nch.

The ark of Noah was, in dimensions—

(1.) $300 \times 50 \times 30 = 450{,}000$ cubits.

The *cube* of .5, or the letter **ה**, or **נ** (its equivalent), is 125 ; then—

(2.) $450 \div 125 = 3.6$, or 36 ;

and $36 = El\text{-}h,$ **אלה**, or *Elohim,* while 125 equals the Hebrew word **אבן**, *abn, stone,* or *Peter;* so, here, we run directly back to a Jehovah use, and to a factor base of $\overline{6 \times 6} = 36$, and which, as will be shown, is the Garden of Eden form. So—

(3.) $360 \div 8$, or **ח** $= 45$,

the characteristic value of the cubical contents of the ark itself. Once, again, the woman is **הוה**, and **י** is the male—together, the perfect number 10 ; but 10 is a circumference to a diameter of 318+, and this, in one form, took the idea of the birth of time, as of the *year;* therefore, in this form, **יהוה** would indicate also *the perfect year;* and 318 was a Christ value. As the perfect year, the circle divided by a horizontal diameter line, would be the symbol of the perfect one, or **יהוה**, while, to denote the *separated functions,* the *upper or sunny half* would be **י**, while the *lower half* would be the **הוה**, or dark, or Eve portion of the year.

The Trowel Face.

§ 83. It has been seen that the commencement of the pyramid proper is by means of placing an ideal pyramid, constructed on the elements of (1.), § 82, in a sphere. The results there displayed are through geometrical proportions. The base of the interior construction is seen to rest upon the geometrical problem displayed in (*b.*), § 74. In that problem, *all* the pyramid elements of construction are displayed ; for A B is the standard base side of the pyramid, C D is the standard height, and D B, with the angle C B E, are seen to enter into the aggregate height lines, and the

roof lines of the interior levels, and chambers.   Moreover,
A D and C D are but reductions from the original forms
as given by Mr. Parker.   The shape of the inclosed figure
A C B E, could be changed so as to display the exact pyr-
amid standard relations ; for by doubling the line A D, or
763.4074 × 2 = 1526.8148+, the proportion of C D :
A D × 2 is that of diameter to circumference of a circle,
and is the exact proportion, and in the exact numbers of
height to *twice* the base side of the pyramid.   Architectur-
ally, this is valuable for symbolization ; for by doubling A D,
and inclosing the extension by the lines A C, C B, B E, and
A E, the new form displayed would be that of the *mason's
trowel face:* so that a trowel constructed after these propor-
tions, and on the scale of the British inch, would afford to the
mason the whole elaborated plan of his work with the re-
lations of the elements from whence these plans took their
rise.

It was an old tradition that in the accomplishment of any great
and good work involving the more abstruse and recondite knowl-
edges, the workmen would be beset by the powers of the realms
of darkness, with their frights, and horrors, and scares.   As
against these, the master workman would protect his work by the
display of the seal of Solomon, the wise man, and the king, even
over the *Efreets*, the *Jinn*, and the *Jann*.   But even here, he
had to summon up an amazing amount of resisting force ; nor
could he do this unless by the assistance of the unseen powers of
light, of truth, and of goodness.   As encouragement to the fail-
ing power and courage of the master workman, on whom the
whole charge rested, a voice, like as the *Bath-Col, Daughter
of the Voice*, would come, in terms, like the following which
were given to Hasan El Basrah in his terrible trials :

" I disposed thine affair at the time when thou wast in thy moth-
er's womb,

And inclined her heart to thee so that she fostered thee in her
bosom :

We will suffice thee in matters that occasion thee anxiety and
sorrow ;

So, submit to us, and arise : we will aid thee in thy enterprise.

CHAPTER IV.

THE TEMPLE OF SOLOMON.

§ 84.   Kabbalistic tradition, passed down in *Succoth*, states that when Solomon was about to erect the temple, he found the measure wherewith to build it, by placing the name of *Jehovah*, יהוה, upon the round mouth of the well-hole in digging the foundations ; and, again, it is said, by placing this name upon the bung-hole of a cask.   The " *round mouth* " and the " *bung-hole* " were circles.   The Israelites converted circular and spherical measures into square and cubic measures, in their representations of them.   It will be shown that the, or one of the, values of the name *Jehovah*, was that of the diameter of a circle ; and it especially meant the unit measure of a *right-line*, or *square-surface*, or *cube-solid*, having a purely circular value. Hence the definition of the architectural idea of construction is thus conveyed in *Succoth*, if this was the channel of the tradition.

The description of the temple measures are to be graded in the following order :

(1.) From the *Book of Kings*.   (2.) From the description of the *Tabernacle;* because it was perfect in all its proportions, and Solomon could do no more than to reproduce it, however much he might vary the style of architecture.   (3.) From the *Book of Chronicles*, not so authentic, but rather a targum, or paraphrase, on Kings ; and (4) from *Josephus*.

The Details of Description.

(*a.*)   The entrance to the temple faced toward the *east*, and the holy of holies was in the extreme west end.

As to the ground plan, the description in 1 Kings, 6, is concise, plain, and specific.   This ground plan has three distinctly separated parts : (1.) The *house*, "*Bayith*."   (2.)

The *temple*, or open vault of heaven, before the face or door of the house, "*Hécal*." (3.) The *porch* before the face or door of the temple, "*Olaum*." Verse 2 says: "And the house which King Solomon built for the Lord (Jehovah), the length thereof 60 cubits, and the breadth thereof 20, and the height thereof 30 cubits." Verse 3 says: "And the porch before the mouth or door of the temple of the house, 20 cubits was the length before the face of the breadth of the house, 10 cubits the breadth before the face (or door) of the house." Verse 17 says: "And 40 cubits was the house, that is to say, *hua*, the temple, before its face (or door)."

There is, then, the *house*, *bayith*, 60 cubits; the *temple*, *hécal*, 40 cubits; and the length of the *porch*, *olaum*, 20 cubits, one length connected with another, for the ground plan, or a total length of 120 cubits. This gives, or embraces, in the *house* and *temple* inclosure, the length of the *tabernacle* and *court* inclosure, of 100 cubits. As to the *porch*, *olaum*, in front of the temple, 2 Chronicles, chapter iii, verse 4, says: "And the porch that was in the front, the length was according to (or agreeing with) the breadth of the house, and the height an hundred and twenty (120) cubits, and he overlaid it within with pure gold." Here, it is observable that the holy of holies was lined with gold; it was at the extreme end of the length of 120 cubits. Here, the *base of the porch*, or bottom of a height of 120 cubits, of the same dimensions as to the length, and one-half the width of the most holy place, is also lined with gold, going to show that the connection of these gold lined rooms had to do with the distance of 120 cubits. Josephus says there was a superstructure above the house equal to it in height (30 × 2 = 60), and then doubled, making a total height of 120 cubits.

What the inclosure of the *temple*, *hécal*, part was, as distinguished from the *house*, *bayith*, is not specified; but it is simply stated that the *door of the house* opened into the *temple part*, and the *door of the temple part* into that of *the porch*. It may have been an intermediate court like

the court of 60 cubits before the tabernacle structure ; the difference not being in the sum of the lengths, which, in either case, was $40 + 60 = 100$ cubits, but in the one case the court is 40, and in the other 60 cubits long.   The temple, likely, was a court looking to the open vault of the heavens, and surrounded by other inclosures.   But what became of the altar of incense?   Of the table for show bread?   Of that for the golden candlestick?   These supposed to be placed in the most holy place before the vail, as in the tabernacle, then the only further change of arrangement seems to have been simply in the location of the *brazen sea* in the northeast corner of the house inclosure, part of the court before the tabernacle, now, or here, placed under roof; the great brazen altar being located before the house in the temple part.   2 Kings, 16, 14, mentions this as in the forefront of the house, and this is again implied in 1 Kings, 8, 64.   It could not be located within the house, as there would be no space around it.   This fact of its being before the house, gives a distance between the house and the porch, as the temple part.   1 Kings, 6, says that there were *two pillars—Jachin*, which, according to Josephus, was on the south side, and *Boaz*, which was on the north side of the porch entrance.   They were 18 cubits in height each, or, together, 36 cubits, or the $\frac{1}{10}$ of 360°; and they girded 12 cubits.

The *holy of holies* was a cube of $20 \times 20 \times 20$ cubits, located, as stated, in the west end of the house, *bayith*. Five colors seemed to be involved about and in it.   It was, according to Josephus, built in *white*, or the color of the *ether*.   Inside, it was lined with *red* cedar.   This, again, was lined with *orange* gold.   The interior was closed against light, and was in the *blackness* of darkness, as the proper place for the ark of the covenant (or *the meeting* together of two opposite principles).   It is thought that these colors were typical—*red*, of the earth ; *golden*, of the sun in general, or the sunny part of the year, when, or as, contrasted with the brazen sun of winter ; *white*, or *silver*

color, of the moon; and *black*, of the night, of the *womb*, of the nadir. The condition of the room as to colors would seem to indicate *time* and *earth* measures, and also the place where those earth measures were to be found, or to be originated, as down in the depths at the center of a mass, in the dark; like finding a starting point of construction by placing a pyramid in a sphere.

(*b*.) The holy of holies was divided, as to its cubical contents, by the placing of the *cherubims*. There seems to be no especial meaning to this word, fitting it for such a place. The meanings usually assigned, though perhaps proper enough, after a fashion, as *man*, *angel*, *cherub*, are really not proper to the term. The word comes from כרב = C·rab, or *Carab*, meaning *prehensile, to seize, grasp as with talons*, or *between* talons; as substantive, it means *a bird* (as a griffin or eagle), fierce, because of its quality of closing upon something, or anything, with its talons. It is the British word *crab*, that seizes with its circular pincers; also the word *grab*, as closing the fingers upon something. On looking at the zodiac signs for *June* and *October*, it will be seen that they are represented as closely alike——one as the *scorpion*, and the other as the *crab*; and, in fact, for the zodiac, these two answered, as stretching over or embracing the two cubes representing that quadrant of the year between *cancer* and *scorpio*, just as the *cherubims* stretched over and embraced the *covenant* or *meeting* of the two halves of the ark. This word is especially used as to the Garden of Eden, guarding the way to the tree of life in the center of the space, the *place of covenant* or of *meeting*. In one sense, they may be taken as the *hooks* barring the opening of the *sistrum*. It is used as spanning half the space over the ark of the covenant; and the same use is here made as for each one spanning half the space over 10 cubits. The real value of the word is thought to be *in its numerical value*, which is כ = 20, ר = 200, ב = 2, or a total of 222. These cherubims were 10 cubits in height, and stood with outstretched wings of 5 cubits in length, each touching, as to each, the wall upon

one side, and the tip of the wing of the other, in the midst.
Underneath the meeting or covenant of the wings was the
division line, either of separation or of meeting of the two
rectangular solids of the ark of the covenant (signifying
the two sexes).

Comparison of the Measures of the Temple with those of the Pyramid.

(*c.*) (1.) As to the *pillars*. 18 cubits = 20.612 + 10.306
feet, or 30.918 feet; and these are the numerical values,
divided by 10, to give the standard measures of the vertical
axial line of the pyramid, to embrace the distance be-
tween the top of Campbell's chamber and the base of the
pyramid, and between the base and subterranean (§ 78).
$30.918 \div \frac{10}{12} = 25.765$, and $\frac{1}{2}$ the length of the ark is 25.765
inches. The girth of the pillars was 12 cubits = 20.612
feet, showing that the circumference was in terms of a per-
fect circumference value. Whether the sum of the heights,
or 36, was to represent a reduction of the circle of 360°, is
a matter of conjecture; but it is strengthened by the fact
that *Boaz* was the representative of Typhon, or the *North*,
or the dark or winter part of the year, and *Jachin* was the
opposite, and as a division of the standard circle of 360°, each
would indicate *the half*, or 180°: and *they are each noted*
as 18. If the conjecture is right, one entered the temple
through the gateway of the *birth* of the year circle. This
is perfectly paralleled by the qualities of the descending
passage-way in the pyramid, as it involved both the circu-
lar elements and their application to the measures of the
earth in its equatorial value of 360°, by its diameters in
miles, and then the measures of the time circles about the
sun made by this very equatorial. As to these applications,
see § 72. This view is partly confirmed by the name given
to the location, or *olaum*, or porch; for, by the interchange
of א for ע, and this is rulable, this may, as אולם for
עולם, be taken for the otherwise similar word which means

time without end, eternity, revolving time, or *Aeon*, or *Age*. "The *Oulomim* (*Aeons*), Voice, and Spirit, and word." (Jetzira, 9, 10). "The fools did not know that the Aion (Aeon, *age*) is not any essence (*ousia*) existing, but some division indicative of time." (Theodoret Hæret. v, vi.). Wisdom says : "I was effused from *Oulaum* (Aeon, *time*), from the beginning, from the earliest time (*mi-kadmi*) of the earth." (Proverbs viii, 23.) (All from Sod. p. 76.)

(2.) The *porch* was 120 cubits high, or 206.$\frac{12}{}$ feet, that so familiar value of the pyramid. It was 20 cubits long, or 34.3533+ feet, or the standard length of the king's chamber in the pyramid. It was 10 cubits broad, or 17.1766+ *feet*, or 206.$\frac{12}{}$*inches*, the standard width of the king's chamber. (3.) The *porch, temple*, and *house* lengths, together, were 120 cubits, or 206.$\frac{12}{}$ feet, also; while the *holy of holies* plus the most holy place, or 40 cubits in all, or 68.7064 ft., was, as to measure, and comparative location, the veritable measure of the king's chamber *region*, with respect to its like location in the 120 cubit height in the pyramid. (4.) The *temple* and *house* lengths, together, or 60 + 40 = 100 cubits = 171.766+ feet, or 2061.2 inches, was that beautiful proportion, as extending from the base of the pyramid to the point C, marking the center point of the king's chamber *region* (refer to § 78). From the base of the pyramid to A is 137.509 + 68.7066 = 206.12 feet, or 120 cubits (taken at the standard measures). The king's chamber region taken from the point C, with a radius of 34.3533+ feet, is 68.706 feet, or 20 cubits × 2 = 40 cubits. There can be no mistake as to the sameness of intention as regards these like measures. (The value 206.$\frac{12}{}$ feet, or 120 cubits, was a great governing measure, and as it implied also the full numerical value 20612, being constructed from it, it was the great number and value, after all, of all construction, as is fully set forth in this work. This number of 120 cubits, then, thus composed, is 206, and

its use thus, and in its original term of 20612, is implied in the great measuring *word* throughout Scripture and Kabbala. That word is *Dabvar*, דבר, or 206, and is the *Logos* word.)

(5.) The *holy of holies*, as a cube of 20, was just $\frac{1}{8}$ of the cube of the king's chamber region in the pyramid, or the full cube of the length of the king's chamber. (This use, emblematically, is referred to elsewhere; but it is of so curious a nature that it is well to state it again. The primal *one*, or *cube*, was taken as containing all material and all life within itself. It was *male-female*; but when disintegration took place of the *one* into *two* separated and opposed existences, as of *male* and *female*, each had to be a perfect *one*, also, in its special construction. To make, therefore, a *perfect one*, which will combine these opposed relations, they are to be used together, and it requires just 8 of the smaller cubes, viz., 4 males and 4 females, together to make the larger. The king's chamber *region* is the great cube of this union; and the king's chamber, as to its length of 20 cubits, was the eighth part of the whole cube, and, of itself, was, as to its length, an oblong of *two cubes*, or, in itself, male-female.) The division by the cherubims divided it into halves, making a nearer approximation to the king's chamber proportions. The ark, though similarly a small rectangular solid or oblong, placed in the holy of holies, as the coffer was in the king's chamber, was differently proportioned, showing a difference of use in measurement.

(6.) As to colors, the *white*, and *red*, and *black* of the temple tallied with the like of the pyramid, the *golden* being an exception.

(7.) As to the *ark*, it was $2\frac{1}{2}$ cubits long, or 51.53 *inches*, or, numerically, the area of the circle inscribed in the square of 6561. Its height added to its breadth $= 3$ cubits, or 5.153 *feet*; showing, for one thing, that it was so contrived as to be reducible back to the elements whence

its, and all the temple measures, were derived; and this could not be done, by possibility, except by the intervention of two grades of measure, and those were, respectively, the British *inch* and *foot*.

(8.)   But the sameness of relations of the temple with those of the pyramid seems to be confirmed by the use of the *cherubims*.   They were 10 cubits high, and by their use marked out the division of the holy of holies into 10 cubit measures.   Take some pyramid developments :

(1.) $5153 \times 8 = 41224$ *inches*, the circumference of the base of the pyramid placed in the sphere.

(2.) $5153 \times 2 = 20612$. $\dfrac{206.12}{12} = 17.17666$ **feet, or 10** cubits. $17.17666 \times \dfrac{4^2}{3^2} = 3053+$ **feet, or 36643.55 inches,** or the circumference of the base of the pyramid proper. $\dfrac{1}{8}$ this circumference is $381.7037+$ feet, or,

$222.222+$ cubits.

It is thus seen that the use of the 10 *cubits value develops the* $\dfrac{1}{2}$ *base side of the great pyramid in the measure of* 222 *cubits*.   It is seen that in the development of the holy of holies, the ark contains the original measures.   It is placed in a space of 10 cubits.   This 10 cubits measure of division is made by the use of the כרב, or *cherub*, and the numerical value of *cherub* is

222.

There is a most strange and far-reaching value connected with this cubit value of 444.444 for the base side of the pyramid.   The 4 sides would equal $1777.777+$ cubits.   The pyramid was constructed from that value of the Parker elements of $20612 \times \dfrac{4^2}{3^2} = 36643.55+$ for circumference value, and $6561 \times \dfrac{4^2}{3^2} = 11664$ for diameter value, or for height. Now,

(1.) $36643.55 \div 20.612 = 1777.77$, and
(2.) $11664. \div 6.561 = 1777.77$;

or, numerically, this very pyramid base value. This is brought about by the factor $\dfrac{4^2}{3^2}$ as common to both. $\dfrac{4^2}{3^2} = \dfrac{16}{9}$; and, as was shown, this expression embraces the factors of the square foot British, because $16 \times 9 = 144$. The reverse use or $16 \div 9 = 1777.777+$, showing that these factor numbers, by another change of use, at once lay the foundation of the pyramid and temple works; the knowledge of the scales of measure, and the use as applied to geometrical elements, being implied. Somehow, all the systems—*Hindu*, *Egyptian*, *Hebrew*, and *British*—belong to one another, and are, in fact, one system.

So, here in this temple, and its holy of holies, and its ark, we have the ear-marks of the full use of the pyramid measures, under another style of architecture. Was there ever such a concordance of measures, unless attended by a similarity of use?

(*d.*) The representation of the holy of holies, in vertical cross section, is as follows:
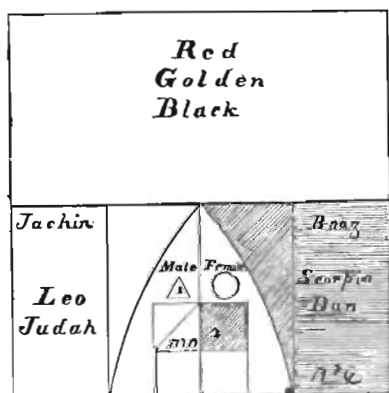
The ark was the residence of Jehovah, and he specifies his place as at the meeting of the cubes of the ark, be-

tween the cherubims. What was his numerical essential, to accord with all these measuring properties? He was the perfect *one*, or 1—O, or a straight line, *one*, of a denomination of the perfect circle, O—viz., 20612; reduced evenly and by scale, to an inappreciable minuteness, *not to be seen by the eye, nor conceivable by the senses, yet, nevertheless, this perfect one.*

Kabbalistic Matters Connected with the Temple Description.

(*e.*) The astronomical features about the temple were plain. The entrance was toward the rising sun, or the *vernal equinox*. The holy of holies was in the *west* of the structure, toward the place of the *setting sun*, the *autumnal equinox*. The great quadrangular was oriented and faced to the *four winds*, or N., E., S., and W. The brazen sea had on its ledges the ox, the cherub or man, and the lion. The lion was the sign of the *summer*, the man of the *winter*, and the ox of the *spring*. The sign of autumn, or *Dan*, was left out—that worm all-devouring, never-dying, the scorpion. This has an architectural parallel. Nork relates that the temple of *Notre Dame*, in Paris, was formerly a temple of the goddess *Isis*, or the sign *Virgo*. On this temple was sculptured the zodiac with its signs; that of Virgo (*Isis*) was left out, because the whole temple was dedicated to her. So with the temple. The whole religious cultus of the Israelites was located in the sign *Dan*, or *Scorpio*, for it was here that " I have waited for thy salvation, O Lord (*Jehovah*)." Under another form, *Scorpio* was the *gate of the woman*, for it was the door of the *evening*, or *darkness*. In Genesis, God says of the *evening*, or *darkness*, that it should be called *Lilah*. Prefix the letter *D*, or hieroglyph of *a door*, and there results *D-lilah*, or " *Door of darkness*," or *gate of the woman*, or the place of the *new conception*—that gate into which Samson, as the sun shorn of his beams, his 7 golden locks, type of the 7 sunny or prolific months, had to enter in the autumn of the year. It is said that anciently the signs

Virgo and Libra were somehow held as one; then there would run the three months of July, August, and September, as embraced between the signs of Cancer, the crab, and Scorpio—that is, Leo and Virgo, or the male-female, would be embraced between the two similar creatures, the crab and scorpion, or between the two cherubims, just as were the two cubes of the holy of holies.   Water was a female element sacred to the womb, or producing power. "Born from the womb upon a flood."   *Brass* was a metal symbolizing the *nether world*, or the *winter sun*, or the *darkness of the year*, which was that of the womb where life should be given to the new year.   The recurring year was symbolized by a serpent swallowing (one or more units of its length) the end of its tail; and thus was a female emblem as reproducing itself.   The word for serpent was, in Hebrew, *Nakash*.   But this is the same term for *brass*, and has, also, these singular meanings in this connection : " Properly the firm, hence the *basis, ground-support* of the bottom of a kettle standing on the fire; figuratively, *the female pudenda*."   *The brazen sea was Typhonic then*.   The *brass works* belonged to *Dan*, who held the gate to the depths of darkness.   All this is conveyed in the description of the building of the temple.   Take the two squares of the zodiac, representing two quarters, or quadrants, of the year ; one lorded over by Leo, the lion, next to the summer solstice, and then going west and downward, the second quadrant is reached, extending to the winter solstice, and lorded over by Dan, the scorpion, who holds the entrance.   This upper square, or cube, is *golden*, the male, full of the fructifying power of the sun ; the lower one is the female, and black, the womb, *the brazen* part.   Now it will be seen that Solomon, the son of David, of the tribe of Judah, whose sign was the lion, made all the *gold work*.   But it was Huram that made the *brazen sea* and all the *brass work*.   Who was Huram? The son of a widow, a woman of dark or black weeds, of the tribe of Dan, whose sign was the Scorpion.   He made the work pertaining to his portion of the zodiac—that is,

the place of Typhon, of winter, of darkness, of woman, of the womb, etc. So, here is represented the western half, and the summer and winter quarters of the celestial sphere, squared, or cubed. Hur is the same with mount Hor, as opposed to Mt. Sinai, where the two mountains represent the same types as above, under the forms of *fire* and *cold*. This same figure is attached, also, to the building of the tabernacle. Touching the male and female cubes, the name יהוה, as embracing both, is also male and female in his name, the two being married. Separated, י, is the phallus, and הוה is *Eve*, or the *womb*, or the *darkness*, or *brass*, or *serpent*. Separated so as to be distinct, and הוה becomes widowed, or a widow, with a right to weeds as dark as the blackness of the depths which her quality represents (yet cunningly enough carries the י concealed). The year, personified by the sun, was as God, supposed to be thus married, but at Scorpio the worm was represented as separating the male from the female parts, whereby one and the female part of the deity, going down to *her own place* of the dark womb, into the waters, became, as brazen rays, or rays deprived of the golden fructifying power, *widowed*. And thus the astronomical types are expressed. This double cube, *red* as representing the earth, seed measure of construction, should be, one *black*, and the other, *white;* and, in fact, the earth was supposed of itself to be made up of like double cubes, fitly framed and matched, to its full and just proportions.

Solomon, who built this structure, was the son of David, who was the son of Jesse. In Hebrew, this word is יש׳, or ISI. In Hebrew, the word יש, or *being, existence*, is puncted so that in English it reads *Jes.* From this יש was derived יש׳, or *Jesse*, and this, in the New Testament, is the Hebrew name of Jesus. The English word, and the Greek translation, is *Jes*, with the idiomatic suffix *us*, and *cus*, not belonging to the word. In many cases, and in many manuscripts, this word יש, *Jes*, is written איש, *aish, man*, from the form אש, *fire*. There is but little doubt but that all these words are organically and generically the

same. The implication is that, while *man* is a *being*, he is also of the *primary flame*, or *fire*. Carried to the extremes of meaning, and Jesus, as God in the personification of *man*, was also the highest *essential fire*, which, by parallelism from the spiritual to the real, in the *material world*, is *the sun* in the heavens. While the derivation *is* good as *Jes*-us from ש, the other was a positively intended alliance in the name, by the framers of the New Testament, because by them he is called "*son of man*," the Ben Enosh of Daniel, and son of Seth ; and this necessitates the other form of derivation. "*Son of man*" was Enosh, א-נוש, and in this name, as relates to the *fire* and *sun* meaning, there is a determinative enforcement, for the letter values read 365—1, or the phases of the *solar year*.

There is something peculiar as to the opening of the 6th chapter of 1 Kings : "And it came to pass, in the four hundred and eightieth year after the children of Israel were come out of the land of Egypt, in the fourth year of Solomon's reign over Israel, in the month Zif, which is the second month, that he began to build the house of (*Jehovah*) the Lord." The chronological date here pointed out has been a very great vexation and stumbling-block to commentators. It is generally looked on as a date falsely taken. But it is well enough a determination of the meaning of the structure which was about to be built, for $480 + 4 + 2 = 486$, which, in feet, as coming from $6561 \times \dfrac{16}{9} = 11664$ inches, was the height of the great pyramid, or sun measure, the interior works of which were copied after in the temple, as has been shown.

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APPENDICES.

The *ancient knowledge* will again abound, and overflow, as water, upon the earth. The *remains* of this knowledge are everywhere about us, in every-day use, *and perfect*. Its revival will point to the restoration of the period prior to the *confusion of lip*. The prophet saw a valley filled with a confusion of dry bones; but the bones were perfect and all there: so with us are the vestiges of this knowledge. At *the word*, bone came to its bone: the perfect framework of *the man*. "And he said, son of man, can these bones live? . . and behold a shaking, and the bones came together, bone to his bone: . . Then, thus saith the *Lord God;* come from the *four winds*, O breath, and breathe upon these slain, that they may live." This is coming to pass. Then shall the people know יְהוָה

INTRODUCTION TO APPENDICES.

§ 85. It is claimed that, in and under the letters and words of the narrative form, the Books of the law of Moses, as the foundation of the whole Bible, contain the same cosmical developments with the pyramid, and that by means of numerical values; that this is enforced in illustrative and determinative ways by the narratives, and by the hieroglyphic values of letters and words running parallel with the narratives, but by change of meaning pointing to and determinating the cosmical lessons, or exact problems; that while the three ways—viz., *narrative*, *mathematical*, and *hieroglyphic*—are diverse from each other, yet they all display themselves without harm to each other, in its special way or sense: that is, the narrative may be true, the mathematics may be well taken, and the hieroglyphic reading may be exactly defined and true to its scope. While this is so, each method may in some sort help the other, by, in some way, setting it forth.

The Opening Sentence in Genesis.

(*a.*) The first sentence in Genesis is,

בראשית ברא אלהים את השמים ואת הארץ:

It must be borne in mind that in the scroll-reading the letters are not separated, but run together, without point divisions, from which fact there are *two readings* to this sentence, as follows:

(1.) B'rāshith bara Elohim eth hāshamayim v'eth h'arets.

(2.) B'rāsh ithbara Elohim eth hāshamayim v'eth h'arets. where the verbal *bara*, *to create*, instead of the *perfect of Kal*, may be thrown into the third person singular *future of hithpael.* (This reading pointed out by Rev. Dr. Julius Goldammer.) The translation of this sentence is, "In the beginning God made the heavens and the earth;" and

(170)

this is the narrative form of the sentence. Suffering a closer analysis, this narrative form assumes a cosmical interpretation, thus : " *B*" is a prepositional prefix, signifying in the largest sense *in*, and with *material*, carrying the idea of *in*, or *out of*, or *from*, as of material. *Rāsh* = *head*, and is a masculine noun, but here used with a feminine termination, it signifies with the prefix and the terminative, "*in the substance of*," or " *out of the head, as a material, or essential.*" Elohim is a compound made up of *El*, a masculine singular, meaning the all-embracing God ; to this ה, or *h*, is added, as separating the elements of El, and out of them constituting *El-h*, or *male* and *female*. It is the compound of two characteristics, involving the use of *two opposites* from whence to mold, as, *in sexes*, the duality of man and woman ; as, *in forces*, the duality as centripetal and centrifugal—for example, electricity combining two opposites under the manifestation of modification of one *initial* force.   To this *El-h*, thus combining these two opposites, a plural termination is added, indicating the two in combination, thus, " *God in the (assumed) double relation of two opposites.*"   Then follows, not " *they created*," as of gods, but "*He created:*" and then, not *the heavens*, as we laxly take it, but " *the two, or duplex heavens;*" for in Hebrew, from the force of a double construction, the term is dual, not singular.   So the sentence reads, "In (or out of) his own essence as a womb, God, in the manifestation of two opposites in force, created the two heavens, and the earth," as to the heavens, the *upper*, or *light*, and the *lower*, or *dark;* signifying the opposites of *heat* and *cold*, *day* and *night*, *expansion* and *contraction*, *summer* and *winter;* in short, the all-embracing cosmical relations.

By this reading, a mere meaningless abstract enunciation assumes a general form of shadowing forth the *means* and *use* by which creation was effected.

Its Parallel Numerical Reading.

(*b.*) Now comes the basis of a more specialized and exact reading, yet supported by the narrative style and the

closer reading.   Referring back to § 34, there is shown the
great use of the *differential El*, as 31, to link together cir-
cular with plane measures, all of which are turned to cos-
mical uses; for, taking the limits of the British measures,
and *differentiating* by *El*, or 31, we have

(1.) $144 - 31 = 113$ $5184 - 31 = 5153$,

thus introducing two bases of relation of diameter to cir-
cumference.   Now, *El* is the first god-name, and the great
working number 31 ; and, by parallelism, in the construc-
tion of the pyramid interior works, where the cosmical
enunciations are made, the *starting point* is the intersection
of the floor line of the descending passage-way with the
exterior slope line of the outside of the structure, and on
this starting point *all else interiorly is made to depend*.
Now, it is seen, § 64 (2), that this point of opening into the
interior is located at a vertical height of 31 cubits ; the 31
thus being *the starter number* of the entrance.   But this
being so, the dimensions of the descending passage-way
depending on this point, are seen to be, § 72 (*c*), a combi-
nation to get a *mean* between diameter of 1 to a circumfer-
ence of 314, and a circumference of 1 to get a diameter of
318 ; so that the end, or foot, may give a line of a slight
variation on this same mean value, looking to the expres-
sion of the value of the square of the earth's equatorial
diameter *in miles*.   It will be further noticed that the pyra-
mid itself is a change on the standard values, so that its
$\frac{1}{4}$ base side and the height of its king's chamber shall
obtain the factor 6, of 36 ; and so likewise here after the
radical, and radical use, of *El*, or 31, is had, it is made her-
maphrodite by the addition of the letter ה, or 5 ; together
framing the number $6 \times 6 = 36$.   So these two numbers,
$31 + 5 = 36$, denote the pyramid work for cosmical meas-
ures.

Take, now, the more exact enunciation of this sentence :
B'—rāsh is $213 - 2$, and 213 is 355 (one of the pyramid
forms of circumference to a diameter of 113) $\times$ 6, or

$355 \times 6 = 213$-0; where also 355 is the Hebrew word *shanah* for the *lunar year*. But, by § 35 (3),

(1.)   113 : 355.0001 :: 36 : 113.098.

Take, therefore, a circumference value of 355.0001, and cross it by 6 diameters of 113.100, thus subdividing it into 12 compartments; and, by means of the form of 36 : 113.098, as denoting a straight line diameter value in 36, the whole value can be changed into square forms of $\overline{6 \times 6}$, or $\overline{36 \times 36}$. The word *rāsh*, signifying this, the letter *B*, or 2, shows that this form is to be used twice, either together or separated. If this is done, then 113.098 becomes 226.2; and, as to this, see the measures of the queen's chamber, § 79. Kabbalistically, the form is used twice as signifying the "*measure above*" and the "*measure below*" of the heavens and of the earth; that of the heavens being the celestial circle of 360°, and the circle of the same value served to belt the earth.

Now, this use is determined by the use of the full word form *Elohim*, אלהים, used numerically, and in a determinative form of what is being done in a general way; for, place the word in a circle,
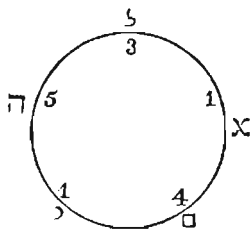
and then reading the values from left to right, we have 31415, or the relation of circumference to a diameter of *one;* which word, as a whole, then, is made to signify the effect of the detailed values of the radical words 31, and 5, or *El*, and *h*. This enforces the parallelism made. But the use of these forms in the pyramid are shown to develop the measures of the heavens and of the earth; so here, for the narrative says, that in them (take the *hithpael* form of the verb) *developed themselves* the heavens and the

earth, a perfect parallelism in one way and use, as will be
seen, of the same forms. Beyond this, taking the words
"*heavens*" and *earth:*" *heavens* is *shāmayim*, שָׁמַיִם, and
add the letter signs, we have $3 + 4 + 1 + 4 = 12$. *Earth* is
Arets, אֶרֶץ, and add the letter signs, and we have $1 + 2 + 9$
$= 12$.   Then each of these words, for one value, sets forth
the value 12.   Both words are used with the definite ar-
ticle הַ, or 5, and this can be used either as 5 or .5 ; so that
the words may denote the use of 12 with the factor .5, and
$12 \times .5 = 6$, where the factor 6 is again indicated as twice
used to form a line of 12, showing use of the same factor
value as to the heavens and the earth, with a fixed rela-
tion 12.

Thus, out of the opposite relations of diameter, or straight
line, to circumference, or curved line, a factor value is
raised to apply to a comparative knowledge of the heavens
and the earth, the word *Elohim determining* the details of
work, and the use of the exact circular relation ; therefore,
the narrative form justifies and shadows forth the exacter
mathematical and astronomical use.

This use and factor form underlies all that follows. Take
the unit value 6, as connected with the British measures,
§ 30 (*a*), and let it be the factor number of the *hours* in a
day. A day was a circle, and was divided into *day* or
light, and *evening* or *dark*, and these qualities were sexed,
as *light* = *male*, and *night* = *female*. By the Hebrew
usage, circles were displayed as squares, and a day, of day
and night, was a perfect square ; but, as each perfected
work had of itself to be perfect, and the day was *male*, and
the night *female*, here was (by division of the 6 factor cubes,
or squares, into two parts each) an oblong for each, which
would not do, so the perfect square was divided into 4
others, which were perfect in themselves—i. e., two *perfect
males* and two *perfect females*.   Now, the division into
smaller circles of *hours* carried the same necessity of per-
fection, and therefore, in *hours*, the perfect day was divided
into 12 males and 12 females. (The *factor square* di-
vided = 2, one male, one female, each an oblong ; divided

again, and each *factor square* becomes divided into *four*
parts, each a perfect square, or two males, two females,
or, for the whole 6 factor squares, twelve males, twelve fe-
males.)   Such being the condition of preparation after 6
days have elapsed, on the sixth day the results of the sixth
day's labor culminating in the fructifying principles of
sacr, membrum virile and *nekabvah, yoni*, (see Gen. I., v.
27), are commanded *to multiply*.   In 6 days there are thus
made 72 hours of *night* and 72 hours of *day*, and $\overline{72 \times 72}$
= 5184, or that subdivision of a solar day, which, with 144,
constitutes the limits of the British long measures,

<div align="center">144 and 5184;</div>

and these limits are here united in the sixth day, for now
the number of hours are 144, and the multiplication or
square of their division into 72 and 72 produces the other
limit 5184.   Then, as above, by use of *El*, or 31, we have

<div align="center">$144 - 31 = 113$ $5184 - 31 = 5153$;</div>

thus showing that the sixth day introduces us to the use of
the Parker and Metius forms of

<div align="center">$6561 : 20612$ and $113 : 355$,</div>

on which the pyramid relations are all based.   And, in
fact, this does introduce to the *seventh* or *circular* day.

Arets, earth; Adam, man; and h-adam-h, earth; are
   cognate to each other, have a like signification, and
   are personified under one form.

(c.)   Now, there should be some enunciation, which
would, in a generalized or narrative descriptive way, rec-
ognize this numerical or measuring use as connected with
the *phallic* or *fructifying* form ; some term which, by
stated qualities, would cosmically embrace all under these
uses.   This was the case, and the showing will prepare one
to enter into the further meaning of the combination of the
measuring with the *phallic* scheme.   (I.) An *earth* form
was built on a *man* form in the Bible, for the word *Adam*,
for *man*, by a suffix *h*, became *Adam-h*, or *h-adam-h*, or
the fruitful earth.   These words were founded on the rad-
ical **ם ד**, *dm* for *blood*, whence *Adam* (which radical un-

derlies the word *Damascus*, connected with *Eliezer*, or
318, the steward of Abraham's house). Now, from דם,
dm, there comes the form *Adam*, אדם ; and this, as a verbal,
has the meaning *to be red* or *blood-colored*, and also *to
bind, to fit firmly to one another*. The Hifil participle is
מאדים, or *Mādim*, and this, among the Hebrews, was the
name for *Mars*. [See Nork's Wörterbuch, under "*Esau*,"
and in other places. He quotes from Jalkut Rubeni. The
Rev. Dr. Julius Goldammer has furnished, also, as au-
thorities for this : (1.) *Talmudic;* Pirke, of Rabbi Eliezer,
c. 18 ; Midrash on Proverbs, c. 9. (2.) *Maimonides*, in
his "Moreh Nebuchin." (3.) *Solomon Ibn Gabriel*, in
his "Crown of the Kingdom." (4.) *The Sohar*.] Seyf-
farth says (Chronology, page 33) : " In what language did
the ancient Egyptians write? This was, of course, the
Coptic. . . . Now, it has been ascertained that the
ancient Coptic was far more nearly related to the ancient
Hebrew, or Chaldee, than to any other language in the
world ; that a great many grammatical forms, and nearly
all the Coptic (Egyptian) roots, are derived from the ancient
Chaldee." and more also to the same effect. He certainly
establishes this by the constant occurrences of examples.

Now the Egyptain god-name for *Mars* was *Artes*, Ἀρτης,
Ertosi, Ἐρτωσι, and the word is but the use of the Chaldee,
or Hebrew form *Arets*, or *earth*. This can be seen at once
by taking the consonants of the word and dropping the ac-
cessory vowels : thus the Egyptian word is ARTS, and the
Hebrew word is ARTS ; and just as in the case of *Adam*
for *man*, *Mars*, and *earth*, here there is Arets for *earth* and
Mars. The fact seems to be that the word *Mars* was not
so much *a person* as *a generalized term* for the cosmical
phases of *production* and *destruction*, or *birth* and *death*.
Blood was *life*, and the shedding of blood was as much
the type of *conception* as of *death*, or slaughter. And so,
in fact, did the Egyptians esteem this god as the Primal
Generative Principle, combining the springing of all things
of heaven, of earth, and of humanity, in himself. As to
this, Seyffarth (Beitraege zur kenntniss), under "*Artes*,"

Mars, quoting, says: "Addit Cedrenus (Salm. 1, C.): Stella Martis ab Ægyptiis vocatur Ertosi (plantare, generare). Significat autem hoc omnis generis procreationem et vivificationem, omnisque substantiæ et materiæ naturam et vim ordinantem atque procreantem." So, it seems, that his being the *god of war*, and of *bloodshed*, was but a secondary idea flowing out of the primary one of shedding of blood in *conception*, for the first time. Thus, the words, are the same for ARTS, *Hebrew*, and ARTS, *Egyptian*, and combine the primal idea of *earth as source;* precisely as in the Hebrew itself, under another form, *Adam*, and *Mādim*, *Mars*, are the same, and combine the idea of *earth*, with *Adam*, under the form of *h-adam-h*.

Now, Mars was the Lord of *birth*, and of *death*, of *generation* and of *destruction*, of *ploughing*, of *building*, of *sculpture* or stone-cutting, of *Architecture*, of the *origin of measures*, and of *their uses;* in fine, of all comprised under our English word ARTS. He was the *primal principle*, disintegrating into the modification of *two opposites for production*. Astronomically, too, he held the birthplace of the day and year, the *place of its increase of strength*, Aries, and likewise the place of its death, Scorpio. He held the house of *Venus*, and that of the *scorpion*. He, as *birth*, was *Good;* as *death*, was *Evil*. As *good*, he was *light;* as *bad*, he was *night*. As *good*, he was *man;* as *bad*, he was *woman*. He held the cardinal points, and as *Cain*, or *Vulcan*, or *Pater Sadic*, or *Melchizadek*, he was Lord of the *ecliptic*, or *balance*, or *line of adjustment*, and therefore was *The Just One*. The ancients held to there being seven planets, or great gods, growing out of eight, and Pater Sadic, *the Just or Right One*, was Lord of the eighth, which was *Mater Terra*. The *pictured*, or delineated, symbols of his power, were: *Membrum virile*, of "*Martis generatoris;*" *Testis* and *Yoni*, "truly the female pudenda sacred to Mars," and equal to the *egg with the central germ*, or the *circle with the central point*, a Pythagorean emblem; the *triangle;* the *pentapla*, or the outlined form of the pyramid with its

apex and base corner-points ; the *Scala* for measures ; also, the *rota*, or crossed-wheel or circle ; and many others.

Thus, the *Mars idea* is a generalized one, comprehend-ing, *by personification*, all the properties hereinbefore com-bined ; and is an enunciation which will, in a general way, recognize the *numerical*, or *measuring* system, with the *phallic*, as combining the heavens and the earth, and man and woman.   This is a brief outline of the volume of facts derived from historical records, from hieroglyphic, and Egyptian, and other, sources, to be found in the work of Professor Seyffarth ; which work seems to be of great value as to the real truths regarding these matters.

So, *Arets*, *earth*, and *Adam*, *man*, and *Adam-h*, or *h-adam-h*, *earth*, are cognate under the primal form of *source*, in *Mars*.   The idea was to commingle and commonize all things, whether earth, man, woman, time, distance, and solid shapes, under *a one;* yet, again, to separate *the one* into a working, living, fructifying *two.*

Enigmatical Constructions appearing in the First Face-Readings of the Bible Narratives.

(*d.*)   Besides the class of readings of the narratives of the Bible mentioned, there are still others, which, while not being of much depth, are yet removed a little from the first face-reading, and require for non-orientalists some lit-tle instruction to realize.   These serve to take one a step further in the development of the first face-reading.   In regard to the Garden of Eden, for instance, it appears on the first face simply as a locality for the construction of the woman ; whereas, by an orientalism, it appears as an initi-ation of the *knowledge* of the sexes.   The allegorical use or purpose of the Garden of Eden description of the dis-integration of *one* into *two*, in its descriptive terms, for the elaboration of production, is very happily illustrated in a note to " *The Story of the City of Brass*," in Lane's ele-gant translation of "*The Thousand and one Nights.*"   It is as follows : " A certain king saw a beautiful damsel upon the roof of her house, and was captivated by her charms,

and learning that she was the wife of his Wezeer, he sent
this minister to examine the state of one of the provinces,
and went to pay her a visit. But he received from her a
reproof which confounded him. He quitted her abode
abruptly, leaving his seal ring by mistake, in his confu-
sion, beneath the cushion against which he had been re-
clining ; and when the Wezeer returned to his house, he
happened to put his hand beneath the cushion, and there
found the king's seal : so he separated himself from his
wife for the space of a whole year, not even speaking to
her. She knew not the cause of his anger ; and at length
when she was wearied by his conduct, she complained to
her father, who went in to the king, and finding the Wezeer
in his presence, and the Kadee of the army before him,
accused the Wezeer in these words: ' May God (whose
name be exalted) amend the circumstances of the king ! I
had a beautiful garden, which I planted with my hand, and
I expended upon it my wealth, until it bore fruit, and its
fruit was ripe, when I gave it to this thy Wezeer, and he
ate of it what was pleasant to him, after which he aban-
doned it ; so its flowers withered, and its beauty departed,
and its state altogether changed.' And thereupon the
Wezeer said, ' O king, this person hath spoken truth in
that which he hath said. I guarded it, and ate of it ; but
one day I went to it, and saw the footstep of the lion there ;
so I was afraid of him, and withdrew myself from it.' The
king therefore understood that the footstep which the Wezeer
had found was the king's seal that he had left by mistake
in the house ; and upon this he said to the Wezeer : ' Re-
turn, O Wezeer, to thy garden, and thou wilt be safe and
secure ; for the lion drew not near it. It hath been told
me that the lion came thither ; but he did it no injury, by
the honor of my fathers and my ancestors ! ' So, the
Wezeer, on hearing this, said, ' I hear and obey.' " It must
be remembered that the mental characteristics of the ori-
entals are the same to-day, as they were when the descrip-
tion of the Garden of Eden was drawn ; not only so, but
there are very strong evidences that " The Thousand and

One Nights " are of enigmatical construction, containing
even the same pyramid problems, based on the same sys-
tem, herein set forth : this being the method of its hand-
ing down.   The author has never examined very carefully
into this matter ; but refers, as instances, to " The Story
of Noor-Ed-Deen and his Son," and to that of " Hasan-El-
Basrah," in Lane's edition.

For the purpose of merely showing an allegorical dis-
play, barely concealed in the narrative, take the following
two instances, which will amply suffice the purpose :
(1.) The word Samson means the *sun*, and the narrative
is a history of his travel in his orbit.   Samson, root value
שׁמשׁ = the *sun*.   " Tell me, I pray thee, wherewith thou
mightest be bound?   And he said unto her, If thou weavest
the *seven* locks of my head with the web."   Again : " If
I be shaven, then my strength will go from me.   .   .   .
And she called a man, and she caused him to shave off the
seven locks of his head (i. e., the seven months of the fer-
tilizing power of the sun) ; and his strength went from him.
But the Philistines took him, and put out his eyes, and
brought him down to Gaza (or Goat, zodiac sign of De-
cember, or winter solstice), and bound him with fetters of
brass ! (the change of color from the golden rays of sum-
mer ;) and he did grind (or continue his orbital path) in
the prison-house.   Howbeit the hair of his head began to
grow again after he was shaven (his power increased after
the winter solstice).   And they called out Samson out of
the prison-house, and he made them sport ; and they set him
between the *pillars*."   (2.) Job was the personification of
the history of the *year*.   The prosperity of Job was checked :
(1) at the time of plowing ; (2) at the time of the summer
solstice ; (3) at the time of the disposing of the harvest ;
(4) at the time of the vintage.   At this last time a *whirlwind*
came from the *desert*, and blew down the house.   (צפון =
Tsauphon = Typhon = Typhoon = the North, the *evil* side
of nature, as also the *arid heats*.   Teman was bounded north
by the desert.   The desert was significant of Typhon.
Typhon, the brother of Osiris, held sway beyond the gates

of Sheol, and was also represented in the *whirlwind*.)
"Then Job arose, and rent his mantle, and *shaved* his head."
(The priests of Baal, the sun, were tonsured.) . . .
And said, Naked came I out of my mother's womb, and
naked shall I return thither. The Lord gave, and the
Lord hath taken away. . . . And he sat down among
the ashes." (A cloud of fresh ashes is much like a fall of
snow.) "Now, when Job's three friends heard of all this
evil that was come upon him, they came every one *from
his own place*." This "*from his own place*" is extremely
significant, and is explained by the meanings of the names
of his three friends to properly carry out the astronomical
allegory. Take the names as they come : (1.) Eliphaz =
אלי־פז = *God of Gold* = *Pluto;* Temanite = תמן = טמן =
The Concealed. The place of Pluto was, then, the five
sections under the royal arch, the Pit, the Inferno, of which,
as an Evil, Typhon held the gates bordering on Libra.
(2.) Bildad = בן־לדד = son of *latco* = לטו = *Pluto;* Shu-
hite = שוח = *Grave*, or *cave*, or *dark place*, or, again, *the
Pit*. (3.) Zophar = צפר = *Death;* Naamathite = נעמה,
of whom the Rabbins say : "*She was the mother of the
demons*." Thus explains itself the declining of Job under
the portals of the royal arch into the *five* of winter. This
expression, " to *his own place*," is also made use of as to
Judas Iscariot in the Acts. Seyffarth says that as the hie-
roglyphs of one sentence might contain the necessary con-
sonants of one or more other sentences, to avoid confusion,
the special use was settled by a determinative hieroglyph.
So with Job. To fix more determinatively the recurrence
of the seasons by law, to Job was at the last given three
daughters = the Three Fates (what had happened to him
was fated by the necessities of the seasons) = (1.) Keren—
happuch = Cornucopia = *weaving* or *beginning* of life.
(2.) Jemima = יום = day = *enlarging* the days of life.
(3.) Kezia = קציע = *cutting* = the cutting the threads of
life : and this betokened that the same history was con-
tinually to be repeated.

The sameness of *Arets*, *earth*, and *Adam*, *man*, and

h-adam-h, *the earth*, and the *Garden of Eden*, and the *woman*, and the *seventh day*, can now be shown, and in such a manner as to confirm what has been taken above, as the numerical system of the Bible. It must be stated that the differing meanings based on the hieroglyphic idea are so *confluent* and so *radiating* from one to another subject, yet all united, that it is extremely difficult to place the results of deciphering *in course;* and, therefore, a little repetition here and there in these appendices, and a little running off here and there into matters not specially germane to the proper subject-matter in hand, at any place, must plead this difficulty as an excuse and an apology.

APPENDIX I.

The Garden of Eden.

§ 86. The earth was of two *qualities*, one named sub-
sequently to, and in sequence of, the other ; as (1.) *Arets*,
and (2.) *Adam-h*, or *H'-Adam-h*. Commentators have
made of (1.) the *dry, arid, unproductive* earth ; of (2.)
they have made *the soil*, or the prepared form *to germi-
nate*. Proceeding out of the basic numerical values, as ab-
stractions, it has been seen that the factor value 6 has been
made to spring. Take the word *H'Arets* in its numerical
use of $12 \times .5 = 6$. Here the factor base is 6, while the
desired number is the aggregate of 12, of which there is
no even square root. It is given as an abstract quality, in
itself *an idea*, and in itself *dry*, or *unfruitful*. But from
the transcendental form of a number, as of a line having
length, but without breadth or thickness, or any other sub-
stantive quality, or reality, *change the use* (preserving the
length idea), by converting it into the *area*, or *positive*, or
real form ; and so, $12^2 = 144$, or the square of 12 equals
an area of 144. But this value is *a word*, and the word is
אדם, or *Adam*. Supply the suffix ה, or *h*, or 5 (which, as
the half of *one*, or of *ten*, can be used either as .5 or 5),
or the *female quality*, making the word hermaphrodite,
and there results אדמ־ה, or 144-5, or *Adam-h*, which is
the word *earth*, alike with *Arets, earth ;* and, as thus seen,
proceeds from its use. Proceed as if the form meant mul-
tiplication, and so $144 \times .5 = 72$. Taking this as an ab-
stract number, and turning it into an *area* form, and $72^2 =$
5184, or the characteristic value of *one solar day*. But
the word used for *earth*, thus derived, is, as it were, the
completed form *H-Adam-h*, or *Adam*, with a prefixed as well
as suffixed ה, or *h*, or 5. Having 72, as *Adam-h*, then
for *H-Adam-h* there is 72×5 or by .5, and this equals
360, or 36, or the great measuring, astronomical, and geo-

graphical circle. So, *Arets*, or $\overline{6+6} = 12$, the abstract form, becomes *Adam-h*, or 144-5, and *h-Adam-h*, 5-144-5, another or squared form of itself, with the factor value 5 attached. Now, it is said that Elohim took *Adam*, or *man*, as a *fractional portion*, from *h-Adam-h*, the *earth;* or, he took him as 144 from 5-144-5—that is, *Adam, man,* or 144, is thus derived, and is the square of $\overline{6+6} = 12$, or is a square of four squares of $\overline{6 \times 6} = 36$ each; and $\overline{36 \times 4} = 144$, and $144 \times .5 = 72$; and 72 is the square root of *one solar day* value·; which 144 is the *area* value of the British foot in square inches. Here *Arets, earth, Mars,* becomes *Adam-h, earth, Mars,* and also *Adam, man, Mars;* while the paralleled mathematical use is seen to event. It may be observed that the word עָפָר, *ophr*, for "*dust*," is rather *broken*, or *fractional parts*, the idea of dust being secondary, as a comminuted condition of parts of the earth.

Take the word גַּן־עֵדֶן, *Gan-Oden*, or *Garden Eden*, and add the letter signs as they run, or $3+5+7+4+5 = 24$; the numerical value is 24, and, to show the factor 6, this becomes $\overline{24 \div 4} = 6$, or the 24 indicates four parts, of 6 each. Cross 12, or a line of 12, on itself, and there results the sign of the letter ת, or *tau*, whose sign value *is* 4, and whose symbol *is* $+$. Complete the square on each factor of 6, and there results the completed square of $\overline{12 \times 12} = 144$, composed of four small squares of $\overline{6 \times 6}$, or 36 each. This is the *nucleus form of the garden*. In this garden, the Lord God—that is, Jehovah Elohim—placed the *man*, as *Adam*. As *Adam*, he *was* 144, and thus *he is himself* the nucleus of the garden. Up to this Biblical phase, the god-name has been Elohim, among whose indications was that of circumference to a diameter of *one*, or 31415. Now, the other god-name is brought forward, or יהוה, or *Jehovah*. For one use, this is to indicate a diameter value, either as a straight-line *one* of a denomination of 20612, as has been shown, or else as follows : The running values of the word are 565[1], as the letters read. It has been seen in *Adam-h* how suffix or prefix may be used as the factor

5, or .5. So here the use of ' may be similar. Take the form 113 : 355, where 113 is the diameter value. $113 \times .5 =$ 56.5. The letter values for this are הוה, or *Eve*, or *woman*, and, as a word, this is the half of this word יהוה. ' $= 1$ or 10. Then $56.5 \times {}^{10}$, or the full letter form יוהה, equals $113 \times 5 = 565$. Thus it is seen that this word is from the value 113, a diameter value. The use of the two words, Jehovah Elohim, or Lord God, then denotes this character or condition of values of shapes in this Garden of Eden production. In § 35 (3.) is to be found the form—

     (1.)   6561 : 20612   ::   1.90985 : 6

     (2.)   113 : 355.0001   :: $\overline{6 \times 6} = 36$: 113.098+,

where these circular values are made to produce, and involve themselves with the factor 6.
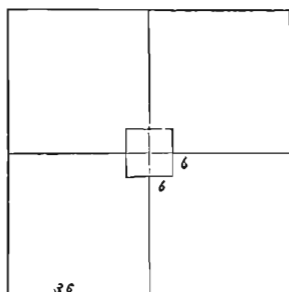
Take the form of the nucleus of the garden, or four squares of $\overline{6 \times 6} = 36$ each; all equal to one square of $\overline{12 \times 12} = 144$. Change 36 from *area* into line value, then the cross $+$ becomes extended so that the four arms are each 36 in length, or as to each arm, have now become equal to the *third term* of (2.), for a *diameter* value to a circumference of 113.098 (or a circumference value to the king's chamber height number of 1.9085×6). Complete the large square; and now, *Adam*, or 144, being the nucleus, the garden has enlarged to four squares of $\overline{36 \times 36}$ each, or 1296 in area each, the numerical value of the *square yard* British; or, again, each one is now Jared, or ירד, or *Yard, the source of descent* (§ 33, (6.) note). The

aggregate of the four squares is $1296 \times 4 = 5184$; or the Garden of Eden is now become a unit measure of *time*, based on the value of the *solar day*, raised from the *factor* 6, through the terms of land measure—viz., the *inch*, the *foot*, and the *yard*; and, as to this last, it has been seen that it indicates the other limit of the British measures— viz., that of the *acre*, and that of the mile value. (§§ 58, 59.)

This being the framework, and these being the different kinds and qualities of measures involved, proof can now be made that all that has been said has been well taken as the Biblical intent. Our cross line has now become 36 and 36, together equal to a length of 72; but 36 comes under the form 113.098+ circumference : 36 diameter, which form was derived from another, as follows :

(3.)　113.098+ : 36 :: 355.0001 : 113.

There is now to be exhibited the collateral use of the last part of this form—viz., of 355.0001 : 113.

The Production of the Woman from the Man.

§ 87. *Eve* was the wife of *Adam*, and she was taken out of *his side*. And *H'Adam*, הָאָדָם, the man, said : "She shall be called *woman*, because she was taken out of *man* (or *aish*, or אִישׁ) ;" where, for the *man* out of whom *woman* was taken, the word now *becomes changed* from *Adam* to *Aish*, from אָדָם to אִישׁ. And this is the basic determinative of the process of construction of the woman ; for *aish*, or אִישׁ, is, adding the letters 311, or reading them as the word runs, and the numerical value is 113 ; which, under this word *aish*, gives for use the form of 113 : 355.0001, connected, as seen, with the other form of 113.098 : 36; which last form, in the value 36, eventuated above, from *the placing of Adam* in the garden. So, from *Adam*, *man*, 144, comes *aish*, *man*, 113.

(*a.*) It is observed that this 113 is a straight line, or di- ameter value, and, as the cross line, which is 36 and 36, indicates 113.098 for each 36, we can take the 113.098 for, or as, the equivalent expression of 36 ; and then the varia- tion of 113 for 113.098 ; both belonging to the same form.

Then we have for 36 and 36, 113 and 113. Now, this is an abstract, or mere length relation. Convert it into an area value, either by raising a square on the line 113, or else by taking the square root of this value. Take the latter plan, and so—

$$(1.) \quad \sqrt{113} = 10630+,$$

as the value of the *side of the man*, or of the square, thus reduced, far enough for the purposes intended. Divide this resulting square into four others, thus producing the crossed condition of the interior, making the figure similar to the *Adam* form above; then, each side of this square, of the value of 10630, will be divided into two values, each of which will be—

$$(2.) \quad 10630 \div 2 = 5315;$$

and this is the sought for result that shows that this was the process of obtainment. For, place the Hebrew letters to this result, as—

(3.)   ה שׁ י א ה

5   3   1   5

and this word thus framed, in Hebrew, is by translation—

(4.)   *The woman.*

(*b.*) In form, the geometrical figure now conforms with the others made of the garden, thus—

10630

5315   *5135*
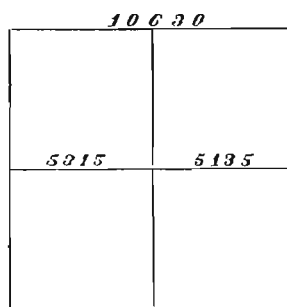
the interior cross lines, showing the division made, the horizontal cross line cutting this reduced form of *man*, or 113, *in his side.* The side thus shown is the *middle of his height.* Now, after having the grand determinative of the basic value 113 given, as that *the woman* was to be taken

out of *aish, man*, or 113, this determinative is accompanied by a natural one, running with the narrative. 113 : 355 is a circular form denoting diameter to circumference. The reduced form of *man* shows that the *woman* value is but a reduction from this original form, and, as shown, it is the *half* cross line of the square, *indicating* a radius, or half diameter value. Under the form, this would correlatively indicate a *semi-circumference*. Now, the narrative reads that the woman was taken not only out of the *side of the man*, as shown, but also that she was *thus taken as a rib*. And this is the *determinative*, for *the rib of a man extending from the backbone around to mid-front, is a semi-circumference*.

The Woman Form of the Garden, the Source of the "Holy of Holies," and of the Four Typical Rivers.

(*c.*) (1.) Draw a square, crossed interiorly, to exhibit to the eye what has been done, and on the cross lines, place the numerical values of the results (i. e., the woman or 5315), thus—
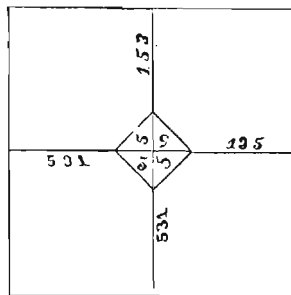
The woman, or the definite article *the*, or ה, and *woman*, or *Ash-h*, or אשה, is produced from *man*, 113. Separate the definite article, or ה, or 5, from the remaining figures of the word, into the central square shown, now triangulated with respect to the large one. There results two cross lines of $5 + 5$ each (or, if the central figure be made to assume the form of a square, on these lines, there results a square of $5 + 5 = 10$ to *the side*), as to its dimen-

sions. But the number 10 is the *perfect one*, and a *Je-hovah* value (§ 82), and by Hebrew Kabbalah, the letter ה, or number 5, *is the womb*. "The Rabbins have a saying that God made all things out of the letter ה." (Sod. Genesis, p. 196.) "ה and ' wedded (that is, ה, *womb*, and י, *membrum virile*), begot the ו, or letter *vau*, which stands as the center pillar of the visible." (Dr. Goldammer, as from Sohar [The World].) Thus, also, the number 10, or letter ', as of 10 cubits, is the value of the *holy of holies* in the temple, as to its most sacred precincts, between the cherubims. Here this holy of holies, this 10 combining in its pictured form both *phallus* and *yoni*, is the perfect *one* cube composed of eight others of the value of 5, or ה, each, the total forming the male-female in one, 10, as here the *womb* of the *Garden of Eden*, or *Paradise*. Plainly, the woman part of woman is the womb; all the rest is connected with its egress-way to the *light:* therefore, the *four ways* marked from the center, are the *four great rivers*, as denoted in the narrative. In the narrative, these rivers are designated as flowing from the garden, and are taken as having their rise in its midst.

(2.) But, as one kind of symbolization but leads to another, and as the mathematical and geometrical system is the essential one, these arrangements, while perfectly conforming to one or more other kinds of conditions, should become subservient to the more essential uses; and such is the case. Having dropped the prefixed letters, or numbers, in the center, where they especially belong, make use of those left, *in the order found*, by placing them in a circle, thus:
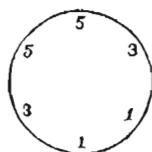
And here, by reading the values, one finds the form

113 : 355

ready made to his hand.   Compress the values to read *two and two*, from right to left, and the form of

$$
\begin{array}{ccc}
5 & 5 & 3 \\
3 & 1 & 1
\end{array}
$$

results; where, in addition to the above, we have the great differential value 31, connecting the extremes 144 and 5184 of the British measures, as *long* and *time* measures, with the forms 113 : 355, and $\overline{5153} \times 4 = 20612 : 6561$ (§ 35 (3.) (4.), actually accompanying the forms it thus gives rise to; for, while the form is 113 to 355, after reading the differential 31, there follows the reading 5153, the Parker area of the circle inscribed in the square of 6561, and the base of the form 20612 : 6561. Thus this form of the *crossed garden* raises those forms of original measure, which are emblematically displayed *by a man fastened or nailed to a cross*.   § 21.

Other Determinatives.

(*d.*) Besides the determinatives given, there are others, here and there in the narrative, pointing and determining the process of elaboration of the numerical and geometrical forms, as being correctly taken. Some can be given. (1.) When Adam is placed in the garden, preparatory to the woman being taken from his side, it is said : "And the Lord God caused a deep sleep to fall upon *H'Adam, and he slept.*" The verbal *and he slept* is the determinative of the process.   The word is ןשייו, *v'yishan*, and, supplying the values, they run 61135. Supply a cipher for the 10 in י, and we have 601135, which, bent into the circular form, runs, or reads, 106135, where 106 is the running determinative of the $\sqrt{}$ of 113, the first three figures of which are 106, and the remaining figures, or 135, are the result to be derived, or *woman*, or השא = 135.   (2.) At the close of the process there is the following statement : "And he brought *her unto the Adam.*" This is a double determinative, connecting the woman, who has been taken from *aish*, *man*, with the other form of *man*—viz., *Adam*. The Hebrew words are םדאהלאה, *Ha El Ha Adam*, and

the running values are $5135 - 144$, or *the woman* with *Adam*, the other form of *man*. (3.) Besides other things, there is reference to a small square in the center, on the crossed lines, giving rise to further reference values. The smallest squared division of the square of 144 is the small square of $\overline{3 \times 3} = 9$. Four of these on the crossed lines in the center of the Adam square give a unit square of $\overline{6 \times 6} = 36$, as a total. There are then 4 squares of the square of 3, where the factors 3 and 4 are designated, or, together, the equivalent of the golden candlestick arrangement of $3 + 4 = 7$. But each small square is of $\overline{3 \times 3} = 9$. Then the numbers 7 and 9 are used, or can be used, in relation to this smaller square. It is observable that this small square is *the* one, then, at the *center* of the Adam square, or at the cleft or division lines of the garden. The Hebrew values for 7 and 9 are characteristic of the letters 𝕪 and 𝕫. Put them together, and there results 𝕫𝕪, or *ots*, or the word for the *tree* in the garden. But, as by the division, it is two trees twisted or bound in one, then $7 \times 9 = 63$, which, read in the reverse, is 36, or the value in area of this small square, or the unit factors $\overline{6 \times 6} = 36$; and this, reading in the reverse, is rulable by Kabbala.

(*c.*) In the forms (1.) $113 : 355$ and (2.) $36 : 113.098$, while the first, or (1.), is used as the abstract form, there is an indication that, under the form of *aish*, 𝕬"𝕹 = 113, the circumference value of 113.098 is implied; also, the 113 in (1.), as seen, is a diameter value. The indication of the second use is thought to be in the word *anashim*, 𝕬𝕫𝕹𝕬, *men*, plural of 𝕬"𝕹, man; for, bend this into a circle, and we find a reading of the continuous numbers 31415, or of circumference to a diameter of one.

The Garden of Eden as the Seventh Day.

§ 88. It will be shown how 355, as the circle of 113, was used for the purpose of correlating natural periods of time with this abstract circular value. It has been seen how this form, with that of Mr. Parker, is connected with square

measure in the use of the factor 6.   It has just been shown
how the Garden of Eden assumes the function of assimilat-
ing both methods.   Now, with the 6 days closed the square
measure form, and with the 7th, came its application to the
circular relation.   This 7th day was the day set apart as
the woman or circular day.   Just as it has been seen that
the holy of holies and the sacred 10 are designated sex-
ually as connected with the substance of the garden, as
being the womb, or productive element, so the 7th day, in
its turn, is but a correlated form of this same garden, in the
form of a circular day.   The sameness is observable in
one respect, for it is seen that the numerical value of the
largest extension of the garden is the value of four square
yards, or $1296 \times 4 = 5184$, or the characteristic value of
one solar day.   Then the 7th day *is* the Garden of Eden,
and is allied in holiness with the holy of holies and the
perfect value 10.   Of this day it is said that Elohim (31415)
blessed and *sanctified* it.   Just as the word *zacr*, or *sacr*,
the special word for *membrum virile*, is translated by the
generalized term *male*, just so the word *sanctified* is, by
translation, wrested from its proper specialized meaning,
as having relation to this day.   The *sacr* was that with
which the Lord should be *memorialized*.   The custom was
to make memorial before the Lord with the *sacr*.   The
word being retained, but losing its primitive use and force,
became the Latin *sacr-factum*, then *sacrifacio*, then the
English *sacrifice;* and is at the foundation of the word
sacrament.   The signification is obvious : Just as the *sacr*
denoted the means of germination of a *new existence*, so
its use, as related to man's connection with another realm of
life, shadowed forth, in whatever other use was being made,
as of bread and wine, that in these means resided the *germ*
of that existence, and that, like the *sacr*, these (bread and
wine) were the vehicles of its planting.   The word *sanc-
tified* is *kodesh*, קרשׁ, and this was a word for prostitution,
for holy purposes, at the temples—esteemed to be a pure and
sacred use.   *Kodesh*, קרשׁ, *to be fresh, new, pure, shin-
ing*, is the same with *hodesh*, or *chodesh*, הרשׁ, *to be fresh*,

pure, new, young; which last word, as substantive, has the meaning of *the time of the new moon,* which period of time in nature regulated or marked the recurrence of the menstrual flow, as $7 \times 4 = 28$ days. The character of the meaning exactly fits to the meaning of the word as applied to the 7th day. Here it has reference to the quality of the 7th day. The word *blessed* is the verbal *b'arak,* or ברך, and giving its values is 222. While this is the same value with כרב, *cherub,* which is taken to signify the cubit half base side of the pyramid structure [§ 84 (*b.*)], and which measure is specified in the narrative description of this garden, it is thought here to have reference to a like relation to the number 7, as this 7th day, for $2.22+$ *is* the *diameter* to the number 7 taken as a *circumference.* Now, it has been seen that the idea of the garden was that it should be a *source of birth of time,* and of *distance measures,* under a *womb use.* It was a part of the cosmogony, that all things arose from a common unit source, to which, by links, they could be made to refer co-ordinately. Having thus symbolized the use, how was it to be made good? Here, again, comes corroboration of the system; for it was only *through* the woman that the proper relation could be arrived at and shown. As the factor 6 lay at the foundation of other kinds of measure, so did the number 7 for this especial use: for $7 \times 4 = 28$ days, a menstrual period; $28 \times 10 = 280$ days, a period of gestation, and $28 \times 13 = 364$ days, a luni-solar, or week, year, as $52 \times 7 = 364$. And this was the numerical factor, which, as applying to *human birth,* would practically co-ordinate *human birth* with the *other system of measures* set forth in this garden. Such being the use of the 7th day—viz., harmonizing it to show forth this especial use—there is very much to confirm what has been said regarding this use. In the second volume of Sharpe's history of Egypt, page 202, he says:

" The Eleusinian mysteries, within the temple of Ceres (bread) and Proserpine (gate of Scorpio, autumn, and wine), in the southeast quarter of Alexandria, which had been brought into the city in the reign of Philadelphus, had now lost their sacredness, and

very much of their secrecy. The priestesses had, for four cen-
turies, walked in procession through the streets, carrying a *sacred
basket;* and, latterly, it had become known that this *basket held
a live serpent, supposed to be the author of sin and death.*"

He quotes from *Eusebius pracp. Evang.*, Lib. III. 12.
He also copies from a coin in the Pembroke collection,
which represents a basket with raised lid and a serpent is-
suing forth. The basket is surrounded by a wreath of
flowers and *fruit*, but the flowers are of a kind that bloom
but once a month, and the fruit is the basket or scrotum
representation.

"*The mystic basket*" of the mysteries contained, among other
things, "*the figure of a serpent.*" (De Sacy, 318, 319.) "Also,
in the most ancient mysteries of the Greeks, they shouted *Eva!*
and at the same time a *serpent* was shown. (Orelli, Sanchon,
pp. 14, 45.) "The Bacchi celebrate the mysteries crowned with
the serpents, shouting aloud *Eva!*" "The name *Hevia* (Evia)
roughened, is interpreted the *female serpent*"—that is, *chouva,*
חוה, for הוה, *Eva*. (Clemens Al. Cohort. ad Gentes, 11, 12.)
(Quoted from Sod. pp. 105, 106.) "The cry made by the females
in their lamentations in these mysteries was '*Eva!*'" (Land-
marks Freemasonry, Vol. II., p. 480, note.)

The letter ט is the symbol, at the same time, of a *serpent*
and a *basket*. It is $3 \times 3 = 9$, and is at the center of the
garden. The name of David was *basket*, "prop. a thing
woven, for figs." A very slight change from this word
DUD, or DUDI, is the same in meaning as *basket*, but in
the plural is "*love-apples*," etc. (Song of Solomon, vii. 14.)
Thus the *scrotum* is signified with the male-female combi-
nation, which *was sin*, and by a figure *was birth* under a
form *of death;* just as it is a fact that the, to some lugu-
brious, symbol of *scull and crossed bones*, as signifying
death, to others is the most precious emblem of *life*. See
also Dr. Inman's pictured descriptions of the *ashcras* or
groves. A vertical narrow door, closed with thongs, sur-
mounted by a radiating fan-shaped ornament of 7 rays, sur-
rounded by bunches of flowers, the number of the bunches
being $6 + 7 = 13$. This is a symbol of the Garden of

Eden.   The Hindu representation of the garden is still plainer.

Note.—The mystery of the cross deepens, rather than clears, as uses of it are found here in the substance of this garden, and also primordially.   The Hebrews have handed down by *targums*, readings which have been obscured by translation.   Joshua viii. 29, they read in the *Arabic*, and in the *targum of Jonathan*, "*The king of Ai he crucified upon a tree*."   The Septuaginta rendering is of suspension from a *double wood* or *cross*.   (Wordsworth on Joshua.) The word is תלה, *Talah*, and may derive the cross idea from the ת, or +.   The strangest expression of this kind is in Numbers xxv. 4, where, by Onkelos (?), it is read, "*Crucify them before the Lord (Jehovah) against the sun.*" The word here is יקע, *to nail to*, rendered properly (Fuerst) by the Vulgate, *to crucify*.   The very construction of this sentence is mystic.   The symbolization of the connection of 113 : 355, with 20612 : 6561, by a *crucified man*, is unmistakable, and here it is found as essential in the structure of the Garden of Paradise.   The theoretical use of crucifixion, then, must have been somehow connected with the personification of this symbol.   But how ?   And as showing what ?   The symbol was of the origin of measures, shadowing forth *creative law* or *design*.   What, practically, as regards humanity, could actual crucifixion betoken? Yet that it was held as the effigy of some mysterious working of the same system, is shown from the very fact of the use.   There seems to be deep below deep as to the mysterious workings of these number values.   Not only are they shown to work in the cosmos, but also they are made use of by Daniel, *the prophet*, as *the guide* to his prophetic utterance.   By sympathy, they seem to work out conditions relating to an unseen and spiritual world, and the prophets seem to have held knowledge of the connecting links. Reflection becomes more involved when it is considered that the power of expression of the law, *exactly*, by numbers clearly defining a system, was not the *accident* of the

language, but was its very *essence*, and of its *primary or-
ganic construction;* therefore, neither the language, nor the
mathematical system attaching to it, could be of man's in-
vention, unless both were *founded upon a prior language,
which afterward became obsolete.* For instance, the word
aish, שׁיא, *man*, is probably the *primordial* word—the very
first word possessed by the Hebrews, whoever they were,
to carry the idea, by sound, of *a man.* The *essential* of
this word was 113 from the beginning, and carried with it
the elements of the cosmical system displayed. Whence
then the language, and its power as the vehicle of a natural
cosmical system, *unless from an unseen spiritual source?*
And if this is so, all that pertains to the showing forth the
conditions of the working of this law, as by these symbols,
and their real personification, would seem to have determi-
nation in the same spiritual realm.

APPENDIX II.

Time Calculations founded on Abram, Melchizedek, Hebron, Joshua the Son of Nun, and Caleb the Son of Jephunneh, as Connected with the Narratives relating to these Personages.

§ 89. Thus there has been unveiled, in the opening of Genesis, the Parker and Metius forms, used in and about the construction of the pyramid, with also the blending of circular with square measure, by means of the factor 6. So there has been shown a numerical use involving, *exactly*, the scales of positive *land measuring* as contained in the British measures, founded on the *square inch;* which, in the pyramid, is shown to be the practical unit of measure raised on the source of *the cubit value*, in the number 20612, a circular value, which, cubed and unfolded, presents the symbol of the cross. Undoubtedly the work of construction in the Bible *is, in sequence*, the process of calculation of *time and distance* running co-ordinately together with *geometrical construction*, until the perfect pyramid is to be found at the period described as that of *the flood*, as will be shown. But, because of inability to trace clearly this building process, with its detailed applications, another method must be resorted to—viz., that of closing back to these conclusions, by setting forth salient positive exhibitions of uses of this system, which can be found in the text. The *exact* method resting on the Parker and Metius forms are the furtherest off, and the most carefully obscured. On these, however, collaterally, were raised calendar systems, exact enough, and for general use, subject to correction, at long intervals, by means of the deeper and more obscured knowledge of cosmic construction. The showings of both methods run parallel with each other ; and the commoner or calendar methods involve such

uses of the other system, that their presentation will help
to lead one to the recognition of the elaboration of the pro-
founder method. One of the phases of calendar calcula-
tion is so marked and prominent, so wide in its limits, em-
bracing such an extent of the Scripture narratives, that it
is well and instructive to give it.

Mr. John Bentley, in his Hindu Astronomy, sets forth
the *war in heaven*, as given by the Hindus, as but a figure
of the calculations of time periods ; and goes on to show,
that among the *western* nations, this same war, with the
like results, took the form of the *war of the Titans*. This
was the same (Sir William Drummond) with the *war of
the kings*, in 14th Genesis. All the results are but identi-
cal with time calculations of the pyramid, or Parker num-
bers. The key of the position is in the names, among
which the most prominent are those of *Abram* and of the
royal *Melchizedec*. The uses of the numbers involved in
these names, to produce time periods, bring in the Gnostic
value of Christ in the New Testament, and consequently,
serve to show the prevalence of this kind of knowledge,
down to the times of the Christian era. Mr. C. W. King,
in "The Gnostics and their Remains," page 13, says :
" The relations of the Sephiroth, or Æons (Ages), to one
another the Kabbalists represent by a number of circles in-
tersecting in a mysterious manner, *ad infinitum*, or else by
the figure of a *man*, or *a tree*, formed out of such circles.
This figure of *the man*, Seir Anpin, consists of 243 num-
bers, the numerical value of the letters in the name *Abram*
signifying the different orders in the celestial hierarchy.
The original idea was apparently taken from the Hindu
figure of Brahma, and the various castes typified by the
several parts of his body ; in fact, the names Abram and
Brahma are equivalent in numerical value." From the
writings of Godfrey Higgins, quoting from St. Barnabas,
it is to be seen that the value of 318 was a great value of
Christ, as was also the number 608. This is to be found,
also, in " Œdipus Judaicus," by Sir William Drummond ;
and also, as to 608, in the work of Professor Gustav Seyf-

farth on " Chronology ;" and also in the hymn of Mar-
tianus Capella.　The 318 is the same with the 318 trained
or instructed servants of Abraham, in 14 Genesis ; or, as
by another version, the 318 *circumcized* men of his house-
hold.　It is to be found in the same place, obscured in the
name of *Eliezer* of Damascus, or the 318 of the Pit—a foil
against the promise of offspring that should be the 318 of
the vernal ascendency.　The value 318 has reference to
the base of astronomical calculation, used, as shown, so
much in the pyramid numbers, as a diameter value to a
circumference of *unity;* 6 times the amount of which, or
$\overline{318+} \times 6$, gives the height of the king's chamber, which
height involves the square root of the solar year, and the
measure of that year upon the celestial measuring circle of
360°, as shown.

(*a.*)　Now the value of the name of Abram, as given in
the Hebrew, is 243, and 243 *is* the one-half of 486, the
height of the great pyramid, in its standard measure, as
shown in the text.　This was a sun measure.　But a change
was made in the name of Abram to *Abraham;* by which,
numerically, 5 was added to 243, so—

$$\text{Abram} = 243$$
$$\text{Abraham} = 248$$

(*b.*)　One Gnostic value of *Christ* being 318, another
was 608 ; and this last involves the personage *Melchizedec*,
to whom St. Paul likens Christ, saying of him that he was
a priest forever, without beginning or ending of days, after
(or in likeness of) the *order* (or *number*) of Melchizedec—
that is, he was an Aeon, or *oulaum*, or [see § 84 (*c.*) (1.)]
porchway of the temple, or the continually recurring flux
and rebirth of *time without end.*　The Hebrew word for
Melchizedec is a compound word, composed of מלכי,
"*melchi*," *my king*, and צדק, "*tsedek*," in the construct,
meaning the quality of *exact probity, righteousness*, or the
equivalent *exactitude, rightness.*　(He was as *Cain*, or
Vulcan, Pater Sadic the Just One, holding the *balance*
of the year, and the distributor of its fruits of *bread* and
wine.)　The word comes from a verbal, and has another

co-ordinative derivative צדיק, *tsadik*, having the precise same meaning, with one remarkable difference noted in the dictionary as "*spec. misericors*"—that is, the specialty of *mercy*, or *pity*, or *forgiveness*. Christ was especially represented as having all the attributes of an *exacting* God, under the *law* (so Paul), softened by these very qualities.

(1.) Now, the word *Melchizedek*, or מלכי־צדק = 40 + 30 + 20 + 10 = 100, + 90 + 4 + 100 = 294, while the correlated exception of Melchizadik, or מלכי־צדיק = 40 + 30 + 20 + 10 = 100, + 90 + 4 + 10 + 100 = 304. As seen here, the word Melchizedek can be changed to Melchizadik, by which change *mercy*, and *pity*, and *forgiveness* are worked as additional qualities on the first word, *by the addition of the value of* 10 *the perfect one*. As a fact, the narrative determines this very change, for Abram is represented as paying *tithe*, or the *tenth*, to Melchizedek, or 10 to the number 294, thus making it 304. (Now, Abraham is represented as pursuing with his 318, to *Dan*. But Dan, as will be shown, is astronomically in Scorpio, the zodiac sign, the gateway to the descendant, the place of the crucifixion of the year; the place where *D-Lilah* received Samson (the sun) into her, so represented, *dark* and treacherous embrace; the place called *shiac*, שיח, or *the pit*, a word from that verbal, the hifil participle of which is *M'siach*, משיח, as *he who causes to go down into the pit*, as here, astronomically, for the salvation of the world.)

(2.) *Abram*, then, is 243, *the half of* the sun measure 486; and Melchizadik (the *tithe*, or 10, *being paid*) is 304, *the half of* 608, or the other Gnostic value of *Christ*, or *M'siach*. Give the other value as of *Abraham*, or 248, and make use of the values found.

$$(a.)\quad \text{Abram}\quad =\quad 243$$
$$\text{Abraham}\quad =\quad 248$$

Make use of these with $\overline{304 \times 2} = 608$, the *Christ* value.

$$(b.)\quad 608 - 243\quad =\quad 365;$$

or the solar year value,

$$608 - 248\quad =\quad 360$$

--the value of the celestial circle of three hundred and sixty degrees, or that *on which* the year is measurable.

(*c.*) Cassini, in the last century (according to Godfrey Higgins), discovered the great cycle of 600 years as belonging to the Hebrews, as well as to Hindus and Siamese, and shows that Eusebius' (who, with Constantine, secularly founded the Christian Church) chronology agrees with its use. It is the great divine *avatar*, or incarnation period. The greatness of its value consists in the fact that it serves to measure the time of conjunction of the sun and moon in the heavens, *in the same place*, by recurrence; whereby, by astrology, a new birth should ensue. Cassini said of this, that it was one of the finest astronomical periods known, and worthy of all praise. It is one that remains perfect from cycle to cycle, by the intercalation of 1.+ days in 600 years.

(1.) Here, again, the pyramid values come into play, for 190.9853+, the numerical value of the $\frac{1}{4}$ base side of the pyramid, or 10 times the height of the king's chamber, or 31.8, the *Christ* value, $\times$ 6, *is* the diameter to this very value as a circumference. So, also, as a straight line value, it is represented for circumference by $\overline{1130.98 \div 6}$.

(*d.*) Now, Godfrey Higgins finds 608, also a cycle index, connected under the system with that of the 600, and attributes the difference to difference of value of precession of the equinoxes discovered. But in this he seems to lack strength of proof. Cassini, as has been said, showed the value of the 600, as co-ordinating *lunar* with *solar* cycles. If you wish to measure solar time as of days in the year, for 600 years, on the great circle of 360°, the formula will run—

(1.) $365 \frac{1}{4} \times 600 = 360 \times 608+$;

whereby the 608, or *Christ*, or *Melchizadik*, value becomes a measure *of transfer*, or *of equivalence of solar time into the division of the zodiac into degrees*. Hence, both these personages, under the number form, were means of meas-

ure of transfer of solar time in days into degrees of the time circle.

(c.) Here, however, it will be said, or objected, that a foreign value has been introduced to bring about this result, viz., $\frac{1}{4}$ of a day has been added to the 365 obtained by the use of *Abram* and *Melchizadik*—that is, that the year is now used as corrected in the calendars, viz., by the intercalation of 1 day in 4 years ; or, by another showing, to $\overline{365 \times 4} = 1460$ days, one day has been added, making the period that of the *bissextile*, or *leap year*, or a full period of 1461 days. This is true ; and, true to the need, this very correction is provided for, and most prominently marked, in *the place of residence* of Abram, which was *Hebron*, formerly called *Kirjath-Arba*—which latter name means *the city of* 4.

Hor Apollo says : " They (the Egyptians) further represent it (the year), by *a quarter of an acre*," or *aroura ;* and, " The acre, divided into *four*, denotes the *bissextile* period of *four years* " (Volney's Ruins, page 134). It is thought that this is also noticed by Professor Seyffarth. So, the *city of* 4, or *Hebron*, or *Kirjath-Arba*, the place of Abram's residence, would serve to denote the measure of the bissextile year, and was thus the proper place of residence of Abram, *the sun measure.* When the three men (angels) came to see Abram, he was seated in the opening of his tent, representation of the pyramid, the time being spoken of as *midday.* Here was the sun directly over the apex of the pyramid, of which the height was indicated by 243. The contrast of this kind of measure is in Lot, Abram's brother, being seated in the gates of darkness, or Sodom, or woman's lust, at evening. (There is a very curious affinity between the words for *Hebrew*, for *Hebron*, or rather *Chebron*, and for *Hebron*. The word for Hebrew is עֲבָר, which, as *ober*, means *to pass over ;* but, also, *a union*, *a joining together*—and this word equals *Heber*, or *Cheber*, חֶבָר, whence *Hebron* or *Chebron*, the residence

of Abram : but this is in affinity with *Heber*, הבר, " *to divide in pieces;* hence, figuratively, *to divide off*, to *determine the heavens*, after the manner of astrologers." Hence the glyph of Hebron, as a united yet parceled-off heaven, appears in the run of the word.)

(*f.*) But the above statement does not rest for its support upon its intrinsic strength, or upon its curious fittings in the connections made. It is fully confirmed. Of the children of Israel who left Egypt, only two were permitted to enter the promised land. One was *Joshua, the son of Nun*, or of the *fish*, and the other was *Caleb, the son of Jephunneh*, or the *dog the son of the female dog*. Both were astronomical types. (Nork, in Wörterbuch, says that Joshua . . . is the biblical Æsculapius *soter*, inasmuch as Æsculapius had *the dog* for a companion, even as Joshua had Caleb (the dog) ; also Hermes Kunocephalus, the *fire dog* in the summer solstice, in the month of the lion, when Sirius rises heliacally with the sun, and dogs are offered to Æsculapius ; for Caleb's father is the *solstice*, or turning-man (יפנה, *Strophios*, Vergilius), and to the dog-headed Anubis the predicate *Strophaios* (*hinge*) belonged.) Joshua was a type of the sun, and Caleb was a type of the great cycle of the sun, which cycle, as the Sothic period among the Egyptians, was marked by the rising of Sirius, the *dog*-star, in Egypt, heliacally with the sun. (Joshua, as *fish*, was also a Jehovah numerical form, for *Nun, fish*, is נון $= 565$; and the Jehovah form is $56.5 \times 10 =$ יהוה $= 565 =$ also, 113×5.) The Sothic period was that of the vague year of 365 days, corrected to the true solar value. Falling back $\frac{1}{4}$ of a day each year, in 1461 years the correction would take place, by dropping a vague year from the count ; it being simply an enlargement of the bissextile correction of 1460 and 1461 days in the period of four vague years. So, Caleb was the *dog*, sure enough ; but he was the dog-star, to determine a point for bissextile correction, or for correction of the Sothic period or

cycle. When he entered the promised land, where, in it, was his possession assigned to him? Why, of all places, he was assigned just that one that proves all that has been said—viz., *Hebron*, or *Kirjath-Arba*, the *city of* 4, the residence of Abram the sun measure, significant of the bissextile correction in days of 1461 for 1460, and of the Sothic cycle correction of 1461 for 1460 years : "which place," the record goes on to state, " before that time, was *Kirjath-Arba*, which *man* was great among the Anakims." That is, the *city of* 4, which (*man*, or 113 circumference to 36, or 4 squares of 6×6 each, for the *city of* 4), was great among the cabiri, or *strong ones* (Gibborim), or planets, or cycles, for the correction of their recurring periods.

A hint is observable in the Bible as to indications of time cycles. "*Enoch*," connected with the year circle, "*walked* with God, and he (was) not : for God took him." *Noah* was " perfect in his generations ; Noah *walked* with God." Noah was pre-eminently a period marker. "*Hebron*, therefore, became the inheritance of *Caleb*, the son of Jephunneh, the Kenezite, unto this day ; because that he *wholly followed* the Lord God of Israel ;" and *Caleb* was *the determinator*, by correction, of the leap year and the Sothic period. Of Melchizedek (Pater-Sadic), Hebrew learning has handed down that he was without *beginning or ending of days*. *True*, but he was a means also of determining both by correction, holding the balance of the ecliptic. (As to the value of Melchizedek of 294, this is 49×6 ; and as to the number 49, or 7^2, attention is called to " Proposition 2, Theorem," and to " Proposition 3, Theorem," of a " Quadrature of the Circle," and " The Square Root of Two," by W. A. Myers, of Louisville, Ky. (Wilstach, Baldwin & Co., Cincinnati.) It may be that Mr. Myers has reproduced an ancient method for the calculations of circular elements as sines, cosines, etc. His Proposition 3 is as follows :

"(1.) If a circle be described with the square root of two for a radius, and the *one-fiftieth* of the square described on the radius be deducted therefrom, the square root of the remaining *forty-nine fiftieths* can be extracted exactly. (2.) The square root of the

$\dfrac{1}{50}$ so deducted will be the sine of the given arc. (3.) The square

root of the remaining $\dfrac{49}{50}$ will be the cosine of the given arc."

In many respects, his work is well worth attention.)

§ 90. Commentators are struck with the marked simi larity of the histories of the lives of Abram and Isaac. They seem to be phases of some one underlying subject-matter. Suppose this to be so, and that this subject-matter is astronomical, or numerically connected with astronomy; then it is observable that the age of Abram, or 175 years, added to the age of Isaac, or 180 years, amounts to just 355, the Hebrew word for *year*, or *shanah*, or שׁנה; and also the circumference of a diameter of 113, together the Garden of Eden measures. So Abram and Isaac, together, are *but one circumference*, and that *a year circle*, for as-tronomical determinations.

Take, therefore, the calendar keys here presented in the showing of the bissextile and Sothic cycle correction. As a whole there is 355 the combined value of Abram and Isaac, the abstract circumference value of which 113 is the diameter. 113 is *man*, and from him in the *Garden* is worked out the connected Parker form of 6561 : 20612, with other uses. While 113 is *man*, however, 355 is the Hebrew word *shanah*, or *year;* and here, in Abram-Isaac, the *man*, 355, as the *year*, eventuates. But with Abram as part of this year value, the natural year of 365 days is worked out, and also its measure circle, 360 degrees. But 360 was also with the ancients a *year day value.* So there is elaborated in this use three year day values—

(1.)   355   360   365 ;

where, by the order, and very relation shown, the reason of the form, as applied to *time measure*, is shown; for it is a comparison of an *abstract circumference value*, 355, with the *natural year value*, 365, and is also connected with it by use of another *year value*, 360, which is also a celestial and geographical measure. The beauty of the form con-sists in this, that 360 is the *mean* between the *abstract* and *natural year* circle value.

It is seen that while ordinary calendar systems can be formed on this form, so, also, it links, in 355, with the forms for exact cosmical determinations.

Now, with the ancients the picture of a year was of a serpent swallowing the end of his tail (or one or more units of its length). Take the woman form of *time* production. It is—

(2.) $7 \times 4 = 28$, and $28 \times 13 = 364$,

and this is the luni-solar year day value. This is seen to be one day less than 365, the vague year day value. A serpent of 365, then, swallowing 1 unit of its length would symbolize the expression 365-1, or, in Hebrew, אֱנוֹשׁ, or *Enosh* son of *Seth*, the *son of man* (Daniel), or the combination of the two kinds. By sympathy, 355 would take the same form as 365-1 : so the numerical formulation for the different year values, combined *into a system*, connecting itself with *land measures*, and *pyramid*, and *Garden of Eden*, and *temple*, and *tabernacle*, construction, would be—

(3.) $355 \brace 354 \; 1$ $360 \; 1 \atop 359$ $365 \atop 1 \; 364$

In truth and in fact, while 355, or *shanah*, is the Hebrew word value for *year*, the true Hebrew and ancient *year* value of this kind was—

(4.) $355 - 1 = 354$ days.

And here its origin is laid bare. So, also, the working of the woman sexual form of the garden is seen to harmonize with every other, or connect with every other. In truth, in calendar calculations, the woman sexual use, under the number 7, seems to have been a fundamental one. It is true, too, that while the Garden of Eden involves 355 through 113, so it has also reference to this very value 354 as a circumference instead of 355, or as well as 355. Take the form 113 : 355, multiply by 5, and there results 565 and 1775. But take $355 - 1 = 354$ and·multiply by 5, and there results 177-0. Now, by adding the *full* values of the letters in the words *Garden Oden*, or גַּן־עֵדֶן, and

there results $3 + 50 = 53$, $+ 70 + 4 + 50 = 177$; which is significant of this change, for $177 \div 5 = 35.4$. Strange it is that bend this into the form of a circle, and 354 may be read 345, which is the name Moses, מישה, or 345. But this name seems rather to have reference to the radius value of circular elements (3.), § 82, having reference to the *interior works*, of calculation of astronomical admeasurements, in the great pyramid.

Uses of and developments of this form (3.) will be shown hereafter, with confirmations as to its ancient recognitions.

APPENDIX III.

The Word, or Logos, connecting with John, or Jonah, or Dove, with J-hovah, and with Jes-us, through the Fish.

§ 91.   (*a.*) Attention is desired to the formula of—

$$(1.) \quad 206.\overset{12}{—} \text{feet}, \times \frac{4}{3} = 274.8266,$$

as arising from the original Parker formulation of—

$$(2.) \quad 20612 \times \frac{4}{3} = 27482.66+,$$

in § 78 (*c.*) (3.), valuable as giving the standard height from the base of the pyramid of 137.4132+ feet, + the standard height of the king's chamber *region* of 68.7068 feet, equal to 206.$\overset{12}{—}$feet; or 80 cubits + 40 cubits = 120 cubits: and also developing the same measure in § 78 (*e.*) (2.), in 274.826 — 206.12 = 68.706+ feet, or the king's chamber region.

The use is the *origin* of measure 20612, where it is worked into a *foot* and *cubit* value of, respectively, 206$\overset{12}{—}$ feet and 120 cubits, to obtain a form of measure for regulating the interior works of the great pyramid, having reference to the comparison of *lunar* with *solar* time, and the correlation of *distance* measure—all *cosmical*, or of divine adjustment. It is seen that the form retains, *numerically*, the *origin of measure*, in the abstract number 20612, then uses it as 20612 inches (seen in § 78), then as 206$\overset{12}{—}$ feet, *which is* 120 cubits. In 120 cubits there is the number 12, or 6 + 6, the means of application of the Parker forms to *earth measures;* which, as composed of 6, is indicative of the change worked on the standard measures to obtain actual, or real pyramid measures: for 6 is circum-

ference to the well-known number 1.90985+. This con-

dition, then, of the number form, as of $206.\frac{12}{}$ feet, or 120

cubits, is a great controlling one, as at the base of cosmic
and earth measures, in construction.   In this form of

$206.\frac{12}{}$ it carries the decimal $\frac{12}{100}$ as implied; that is, to

express the value 120 cubits, one would say, "It is 206
feet," meaning, or intending to mean, the exact value of

206 feet and $\frac{12}{100}$ of a foot.   This numeral 206, thus used,

gives the interpretation of the great word *Logos*, or *The
Word*, used so mysteriously in the Scripture. This is from
and but another form of the Hebrew word דבר, *dābvar*, or
word. Kabbalistically it was, that by the *Word*, or *dabvar*,
God created all things.   The value of *dābvar* lays in the
numerals, or values of its letters, which, added, are

<div align="center">206,</div>

having reference to the perfect circumference 20612, under
the form of that part of the expression—viz., 206, used as
a whole number, in feet, for the expression of 120 cubits.

The New Testament being, after all, but an unfolding
of the mysteries of the Old, under another dress, is
the best illustrator we have of the mysteries outside
of the ancient books; the Hebrew Kabbala being of
less use, because of the care used to conceal its teachings.
Therefore, the New Testament can be resorted to, to ex-
emplify and teach the hidden wisdom of the Old. What
is stated as to this value (which also implies the Jehovah
value of a *one* of the denomination of 20612) is exempli-
fied in the opening passage of the Gospel, "*according to
(or agreeing with) John;*" premising that the Greeks trans-
lated *Elohim* by *Theos*, and *Jehovah* by *Kurios*, as the
English do, respectively, by *God* and *Lord*. This opening
sentence is a type of the opening sentence of the first verse
in Genesis. John says:

"*In the beginning was the Word, and the Word was
with God, and the word was God.*"

It has been seen that the word Elohim stands for the re-

lation of 31415, or circumference value to 1, or diameter of unity. Now, the *Word*, or *Dâbvar*, its Hebrew prototype, is the expression of a whole number of 120 cubits, under the value of 206 feet and $\frac{12}{100}$ of a foot. It thus carries with it the numerical value

<div align="center">20612,</div>

or the value of a perfect circumference, raised to just that value, on which such sublime results as have been traced could be produced.

John, then, was simply setting forth the law of creation, in the terms of 31415, or circumference to a diameter of unity, raised to this very form or value. The *Word*, then, as 20612, was but a play upon *Elohim*, or *God*, as 31415.

John the same with Jonah.

(*b.*) The use of the name "*John*," as this opening sentence is "*according to John*," is perfectly appropriate to the expression; for John, in Hebrew, is יונה, or *Jonah*. The value of the name, adding the letter values, is

<div align="center">71 ;</div>

or the $\frac{1}{5}$ of 355, the circumference of 113 (which raised, as stated, is a Jehovah value). So that, while the *Word* implies the relation 20612 : 6561, *John* shadows forth that of 113 : 355.

The Word "Beginning."

(*c.*) The word "*beginning*" is also appropriate in the connection, and is here as the first word in Genesis. It is used for the equivalent Hebrew word ראש, *râsh*, for *head*, or *substance*, or *beginning*. The value of the word, in Hebrew, is 213, and is equal to $355 \times 6 = 213$-0 : so that *John*, or $71 \times 5 = 355$, and this $\times 6 = 213$-0, or *beginning*, or *head*.

John and Jonah as Dove.

(*d.*) This word *John*, in Hebrew *Jonah*, is also the Hebrew word for

<div align="center">*Dove*,</div>

which last word, as used in the description of the *flood*, symbolized the use of this very circumference value of 355, because, it will be seen, on the reading of the narrative, that the word is used in the connection just 5 times, or in all $71 \times 5 = 355$. For this reason, with others, it became one of the greatest symbols among all the ancients.

The Fish, as connected with the Dove, or John, or Jonah.

(*c.*) By a most curious, but exquisite use, this word *Dove*, thus indicating a *circumference* value, was made convertible into a *diameter* value, through the intermediation of

The Fish;

of which Joshua was the son. The relation of this word *fish* to the divinities is also not only to be found among the records of the heathen, but at the base of the Christian Books. One derivation of its value is from a mathematical postulate, that any two quantities which, relatively, are equal to a third, are equal to each other. The Hebrew for *fish* is נון, *nun* (the ecclesiastical English word *nun*, a female devotee), and giving the values of the letters as they run, the power of the word is

$$565$$
נון.

But the word for *woman*, or *Eve*, or the feminine part of J-hovah, is הוה, and, giving the values of the letters in the same way, the word and value is

$$565$$
הוה.

Thus it is seen that *nun*, *fish*, becomes equal to, and thus is the same with *Eve*, the *woman*, or *hovah*, or הוה, the feminine part of J-hovah, as a *diameter value*, because $113 \times 5 = 565$ (which, by change of enlargement, as seen, becomes circumference to a diameter of 36). Now, place the numerals over the letters of the word *John*, or *Jonah*, or *Dove*, as

$$556^{1}$$
יונה,

and it is seen that all the values of J-hovah, as 565[1], are
used, but the arrangement is changed in the last part of
the word as to the order of the number *hovah*, or 565, leav-
ing the *'*, or 1, or 10, which is the *J*, or *Jah*, of *J-hovah*,
standing isolated. If, therefore, the fish swallows the
word, and casts it up from its belly, it symbolizes a *birth*
of the subject-matter in the *fish* or *nun* form, or

556 becomes 565 ;

or the *dove* as $71 \times 5 = 355$, a *circumference* value, is, by
use of the fish as a womb, or flux, made to assume the
value of a *diameter* to this very circumference, for

$$113 \times 5 = 565.$$

To 565 as the re-arrangement of the 556 of the fish form,
or birth, add the *head* of the word—viz., the *J*, or *Jah*, or
male part, which has suffered no change—and now

Jonah, or John, or Dove, as 556-1,

becomes J-hovah, as   565-1.

So much for the *fish* or *nun* use. (When John, or Jonah,
or Dove, *Baptist*, was beheaded, his head, or *'*, or jod, was
delivered, or added to, the woman, or *hovah*, whereby, by
typical change, she became, *gnostically*, J-hovah ; but his
body, or 556, or his equivalent *hovah* part, was buried in
mother earth, or went into the *gate* of Scorpio, or the
womb, or the fish's mouth, which of itself was *hovah* sym-
bolically carrying the phallus concealed. It was but a play
upon these types. Astronomically, also, while J-hovah
stood as the emblem of the complete circle of the sun's cir-
cuit, or the year, the *J*, or *'*, represented the *power* of the
sun above the equinoxes, while the *hovah*, or female part,
represented all below, as the winter, or water, part. So,
Jacob, the *heel*, § 92 (*b*.), after his before morning struggle
with that angel, who was Esau, passing upward, had his
name changed as the morning sunbeams fell upon him.
He changed his before feminine qualities, and now became
Jes—213; i. e., שׂיּ-רָאֵל = Jes-rael, or *Jes*-us *head*, ·as
the Greeks would have had it. The mark of separation
between the two conditions was the brook Penuel or Jab-
bok. A very happy illustration of the *dove* and *fish* use to

make *Jehovah* can be given from ancient sources. "The Syrians, or Phenicians (says Nigidius), assert that a *dove* sat several days in *Euphrates* (one of the rivers of the Garden) on the *egg of a fish*, whence Venus was born." (Note to Volney's Ruins, p. 168.)   Here the whole trans-formation is shown by symbol.   The result is *woman* as *Venus*, the *primal conception*, or הוה, or Eve, which is 113 × 5 = 565, concealing, as shown, a *man* value; the whole being יהוה.)

The Te Deum and the Birth of the Savior.

(*f.*)   The early church recognized just such uses, as can be gathered and shown from Clemens Alexandrinus.   Nor, indeed, was there any departure, in so doing, from the most perfect reverential observance.   In the *Te Deum*, a song of praise to the Deity, in the recognition of His works, it says: "*We praise thee, O Elohim! we acknowledge thee to be the Jehovah.*"   Then, speaking of the Savior, it is averred that He was, as a *man*, not only born of a *woman*, but, further, that that woman was a *virgin*.   How, then, could such a thing be, consistently with the truth and the laws of nature.   It has been seen that *the woman* could be truthfully, and most perfectly mathematically, *taken as a rib from the side of a man*, without the exercise of any natural procreative function; and, in fact, from the same source, it was just as easy to produce *man*, or *aish*, or *Jes*, from the *woman*, by the slightest possible use of change. *The woman*, as coming from the *man*, or $\sqrt{113}$, was

<div align="center">האישה</div>

<div align="center">5 3 1 5 ;</div>

but if *man* is to be restored from the elements of *the woman*, *add* the values of the letters composing her name, and there results ה = 5, + ש = 300, + א = 1, + ה = 5, = a total of 311.   Now, איש, *man*, is, adding the values, ש = 300, + י = 10, + א = 1, = a total of 311 ; or, reading the values as the letters run, the value is 113.   The woman then is,

in this phase, 311, or *man*. Place her thus, with man as 113, and they stand face to face

$$311—113,$$

just as they are described in Genesis. Thus, however, it is seen how the *man*, *Jes*-us, could be born of a virgin. But so born, he is as *aish*, also 113, and $113 \times 5 = 565$, or *nun*, who was the mother of Joshua the Savior. As to the first expression—viz., "We praise thee, *Elohim;* we acknowledge thee to be the *Jehovah*"—it symbolically becomes, "We praise this principle of 1 : 31415, of which the working values are $56.5 \times {}^{10} = $ יהוה, or $113 \times 5 = 565$; or, in the other form, as exhibiting a perfect *one*, straight line, of a denomination of 20612, the perfect circumference.

The Dove used in Calculations of the Year.

(*g.*) The *dove* was one of the divinity emblems throughout antiquity, in its character of 71, as the $\frac{1}{5}$ of 355. The calculations of time for the solar year sprung from the taken value of the lunar year, which word in Hebrew was *Shanah*, or שנה, the value of which was 355. It is precisely the same whether a circle of 355 is exhibited divided into subdivisions of 5 each, of which the factor will be 71 ; or whether the original circle be taken as 71, or the dove, which, by subdivision, as 355 will exhibit the same ultimate subdivision by 5. In fact, the values 70, 71, 72, and 73, were famous values as denoting $70 \times 5 = 350$, $71 \times 5 = 355$, $72 \times 5 = 360$, and $73 \times 5 = 365$. The ancient method of symbolically exhibiting the *year*, was by a serpent swallowing one or more units of its length. Take 71 as the value of the circle to obtain the lunar year. Let it be subdivided into $71 \times 5 = 355$ parts, or *Shanah*. Bend this into the form of a circle, represented by the serpent swallowing one unit of this amount, and the resulting value is

$$354;$$

which was the universally accepted value, anciently, of the lunar year. And this was because it correlated the human

method of obtaining this value, viz., $52 \times 7 = 364$, which is $365 - 1 = 364$; and to compare, or correlate, $355 - 1 = 354$. These interpretations are interesting as unraveling the meaning of the source of ancient mythology, and as showing a common possession, and common origin, as stated by Clemens. By tradition, the origin of religion in Greece was held to have been by the introduction from Egypt of two *black doves*. By the change worked on the dove value by the fish, two doves would become two fishes as 565, and 565, the zodiac sign of the *fish month;* or like use could be made of the value 71, through circumference values, etc.

New Testament Use.

(*h.*) In the Christian form, the *man*, or *aish*, or אֵישׁ, (this form gives the other of *Jes*, from שׁ, or in Greek or English Jes-us, signifying *the fire*, or *sun*, or *Deity*, or *man*. This word by the masoretic points, which point almost undoubtedly to the true former pronunciation, was pronounced אֵישׁ, or *ish*, or *Jes*, for *man;* the feminine form was אִשָּׁה, or *Issa*, or *woman*, or Egyptian Isi-s, Isis. A collateral form was שִׁי, or *Jesse*, or Isi; feminine Egyptian, Isi-s. But Isi was Jesse, the father of David, who was the father of Jesus, as Isi. So, indeed Isis, Egyptian, was the feminine form of Isi, or *Jes-*, Hebrew, as a form of *aish*, *man*,) was *Jes-us*. But another form for Jesus was by Christian tradition, and Gnostic use, *Ichthus, the fish.* Now the river Jordan is derivable from the Hebrew יָרֵד, *Jared, to descend, flow down;* hence, *river*, with an appended נ, or *n*, or *nun*, or *fish;* or by name and determinative letter, *fish-river:* or it may be taken as *Iar-Dan*, or יַ-*Iar*, and דָן, *Dan*, or the *river-Dan.* Jesus the man descended into and stood in the waters of this river *Dan*, or *fish.* Now in fact both *Dan* and *fish* symbolized the same thing. The zodiac sign of the tribe of Dan was in *Scorpio;* and to the tribe of Dan was geographically assigned the place Dan, embracing the sources or springs of the river Dan, which, as coming up out of the nether world, was the manifestation of the

fabled river Styx. So, indeed, as it signified the place of
entering another condition of existence by *death*, it also
represented the allied condition of a new *birth*. So *Jes-us*,
the *man*, descending into the waters of this river *Dan*,
Scorpio, or *gate of the woman*, where, by a new birth, " I
await thy salvation, O Jehovah" (Gen. 49, 18), was, as to
his body, become a *fish*, or *nun*, whereby the *man* becomes
Jehovah. But in standing in the water the body is the
fish, or in the fish's mouth, while the *head* is the ', or num-
ber 10, or a circumference to a diameter of 318+, which
number was a Gnostic value of *Christ*. But who causes
him to go down into the water? *John*, or *Jonah*, or *Dove*.
And here the transformation is gone through with by sym-
bol. Then the *man*, having become hermaphrodite, half
male, half female—i. e., half ', and half *fish*, or *nun*, or
hovah, הוה—came up out of the water (type of the resur-
rection), and immediately the Holy Spirit descended on
him *in the form of a dove;* which is simply a final deter-
minative indexing the perfecting of the ritual or symboli-
zation. A *voice* is heard : " This is my beloved son." He
was now become the son of both Elohim and Je-hovah ;
he was both diameter and circumference. His *head* was
Rāsh, or 213-0 = 355 × 6 ; and as he " was about 30 years
(*shanahs*, 355) of age" (Matthew, 16), then 71 × 30 =
2130: or the dove, 71, coming down on his *head*, multi-
plied by his *shanahs*, or *years*, equaled 71 × 30 = 2130,
or the *head*, or *beginning* of creation in the first word of
first Genesis. He was called *son of man*, after the words
of Daniel the prophet. This word is taken by Daniel from
the 26th verse of 4th Genesis : "And to Seth (שֶׁי', the
year, 'on coins, and in Phenician שֶׁנַת, שֶׁי',' Fuerst,
under שֶׁנַה), was born a son, whose name he called Enosh,"
or Ben Enosh. This *Enosh* was the " *Son of man*," and
placing the values of the letters as the word runs, one gets
the meaning of the solar year, 365, and the luni-solar year
indirectly, or by implication ; for the word is אֶנֻ־וֹשׁ, and

<div align="center">

אֶ־נֻוֹשׁ

365-1 = 364,

</div>

which last is the woman year of $52 \times 7 = 364$.   And, in-
deed, *Seth*, שת, implies this form of use for $3 + 4 = 7$.

Note as to Fishes.

The symbol of the "*fish*" was a favorite one among all
the ancients.   Mr. Bryant shows its origin, in the mythol-
ogies, to have been in the figure of the Deluge ; the type
being of a fish with the *head of a man*.   In Phenicia,
especially, it was of great import in the idol *Dagon*.
The Christian Kabbala, or Gnosticism, deals very largely
in the mention of fishes ; in such sort, that it may be said
to be rested upon the symbol, though its use everywhere is
made to appear as *incidental* and natural.   The New Tes-
tament narratives have been so highly colored by the kab-
balistic import, that, commonly, too sweeping or embracing
a quality has been given to the idea of fishermen, as ap-
plied to the apostles.   The character of *fishermen*, it is
true, is attached to Peter and Andrew, to John and James ;
but, beyond the little that is said of their catching fish with
nets in boats, no great stress is laid on *fishing* as a *trade*,
or fixed occupation.   There was sufficient to introduce the
use of the ancient symbol, without departing from what
might truthfully have been the case as to fishing in the
Jordan.   The fishing, as conducted by these men, was
in the sea of Galilee, or of Tiberias.   This lake, or sea, is
but an enlargement of the river Jordan, where it spreads
out into wide water, or small lake, or rather pond, of some
ten to twelve miles in length by about six miles in breadth.
The fishing carried on in it was in ships, or small fishing
vessels, with sails, by means of seines or nets.   The popu-
lation to be supplied was a dense one at that time, and the
occupation is represented as pertaining to quite a class,
thus exhibiting a settled business.   It seems impossible
that this could have been the case.   The only condition by
which fishing of that kind could have existed, and could
have been carried on as a trade, in such a piece of water,
would have had to depend upon a constant supply of
fish to catch, from some large body of water as a breeding-

ground, the fishing taking place in what is called the *run of the fish*, at stated seasons.   Communication with such a body of water—as, for instance, the ocean—would stock such a pond with a few fish at all times, but not in such quantity as to justify an occupation as described, save at certain seasons of the year.   This is a simple and truthful state-ment, justified by all the registered experience in such mat-ters.   But the conditions of the Jordan river are fearful for sustaining fleets of fishing vessels plying the trade on the waters of the sea, or pond, of Tiberias.   It is almost a straight stream, with a very rapid descent from its source to its mouth (it is called *The Descender*), save when it en-larges out in the morass of Merom and into the waters of this inland sea.   Its condition parts of the year is that of a brook.   It rises in the springs of Mount Hermon, and, after a run down hill of 150 miles, empties into the as-phaltum lake, in which no fish can live or *breed*.   If the country was far enough north, brook trout might abound to some extent in its waters ; but these would have to be pre-served with care, for it would require but little angling to depopulate it of this species.   The whole of the fisheries of the Sea of Galilee would, therefore, have to depend upon its own breeding-grounds, of which, it may be said, there can be none, save of the species of what are called mud or cat fish, which were prohibited from use, as having no scales, and a few others, utterly unfit to found a fishery on, as a business of continuous calling.   The conclusion seems irresistible, that to have supported a mode of fishing, such as commonly thought and taken to have been the case, would have required a continuous miracle of keeping up the supply.

All this seems to confirm the idea that the relation of *fishing* was to raise a symbol, comporting with and neces-sary to display ancient uses and meanings.

APPENDIX IV.

A Method of Construction of the Julian Calendar, from the Different Year Values of the Ancients.

§ 92. (*a.*) An advanced step can now be taken, even to a way of the construction of the Julian calendar, from means obtained from the *Garden of Eden* data. By *Nork*, the Garden of Eden was one of the birth of *time* and of *man*. Nork was right, and his conjecture is supported by the hidden reading in the description of this garden. It is shown elsewhere that one numerical form for this garden was for the production of *the woman* from *man*, or 5315 from 113. The woman having been thus formed, from her, again, as a source of generation, the production of man commenced. But it has been seen that 113 is diameter to a circumference of 355; and that 355 is converted into a *year* measure under its value in the Hebrew word *shanah, year*, while, also, 1130+ is a circumference to a diameter of 360, which was the standard year. So, while one phase of the garden glyph is given up to the production of humanity, under another phase, by another numerical system, there is shown a springing of time measures. The two phases touch each other in a numerical link. The full form, as already given, is

$$
\left. \begin{array}{c} 355 \\ 1 \\ 354 \end{array} \right\} \qquad \begin{array}{c} 360 \\ 1 \\ 359 \end{array} \qquad \left\{ \begin{array}{c} 365 \\ 1 \\ 364 \end{array} \right. ;
$$

where, from 355, 365, the first being the Hebrew *shanah*, or year word of 355, and the second the solar vague year, by a reduction of *one*, there is obtained the ancient lunar year of 354, and the luni-solar year of 364. It is seen that, through the value 355, the *man* value, and through it *the woman* value, is linked on to a system of time measures. Now, the Garden of Eden, under another phase, is but the

use of the number 7, as the 7th day, and is, in the display
of this use, pictured variously by the different ancient na-
tions. That of the *Hindus* is the most clearly marked, as
descriptive of the *Hebrew* intention. The picture is that
of the woman hermaphrodite, *Indrance-Indra*, the *nature
goddess*, or the *Issa* of the Hebrews, which, in all proba-
bility, was the *Isis* of the Egyptians, seated on the ground,
the top of a tree, which springs from her back and shoul-
ders, spreading over her head, thus indicating her as the
connecting link between the measures of the heavens and
of the earth; the top of the tree indicating the celestial
circle of 360°. She is but a play upon the values 113 : 355.
But passing from these values to the display of others : In
one form of this woman, the *heel* of the left foot is bent for-
ward, so as to be presented to, or before, the mouth of the
pudenda, which is closed by bands, distinctly marked as 7
in number. Of course, this location is significant of birth,
and here the basic numerical value is 7, thus attaching this
as the holy number of generation. How is this number,
then, connected with any feminine trait, having relation to
the generation of *man* and of *time?* Very simply. 7 is
the number of natural days in the week, and a day is a
natural measure of time. $7 \times 4 = 28$ days, the time period
in days for the occurrence of the menstrual flow, which is
indicative of periods of conception. $28 \times 10 = 280$ days,
is the period indicative, in medical jurisprudence, of the
birth of *man*, whose value is 113 diameter to a circumfer-
ence of 355, as shown. $\overline{28 \times 13}$, or 52×7, $= 364$ days,
which is the period indicative in nature of the birth of the
year. The number 7, then, as at the base of these, is the
holy birth number factor. The method of deriving the year
values has been shown as

$$355 - 1 = 354 \qquad 360 \qquad 365 - 1 = 364,$$

and here through the use of 7, the mark on the pudenda
of the woman (who is elsewhere shown to be derived from
the *man* as 113 or 311 ; and, in fact, who becomes by add-
ing up the values attached to her name 311, or the value
of the man again in this number, so that the two stand face

to face, *the counterpart* (כנגד) of each other as 311—113,
yet so that read either way, and the one is the other, the
hermaphrodite idea again cropping out), is seen to spring
the time value 364, which thus is shown to be a connecting
link, worked up to, through the methods of use.　In other
words, there is shown to be a correlation between the birth
of man and the birth of time.　Such being the case, the
circle of the pudenda, once being selected as correlating
time with human birth, can be taken as symbolizing any
stage or condition of such birth : either it may be 28, as a
mark of conception, or 280, a mark of human birth ; or taking
the result for the process, it may be taken as 113, *man*, this
as a diameter value implying its circumference of 355,
and also the scale of time measures 355, 360, and 365,
proceeding from it ; or, again, as 364, a year time value ;
and so on, agreeably to any connecting value.　Anciently,
this same idea was displayed, by implication, in the Egypt-
ian astronomical charts of the 28 lunar mansions, as the
birth circle of time.　This subdivided for the 28, into 13
each, would indicate the 364 ; and this last would be rep-
resented by a serpent of 365, bent into a circle and swal-
lowing one unit of its length.　In Hebrew, both *serpent*
and *brass*, for another meaning, had that of the female
pudenda ; but the serpent had the hieroglyph of the
letter ט, or 9, which is also the base of 6561, the Parker
form.

(The mouth of the pudenda, as signifying the place of
birth, or source of all things, is also significant of another
striking feature, in this, that, as virgin, no conception, and
therefore no birth, can take place without, first, the shedding
of blood.　This perhaps may have been the source of doc-
trinal teaching, as affording a type of the spiritual birth, in
the phrase that "*without the shedding of blood there can
be no remission of sins*,"—i. e., no *birth* unto righteousness.
The very word *sin*, in the Garden of Eden scene, conveys
the idea of sexual intercourse, and this idea is held to mod-
ernly, in the phrase "Marie conçue sans péché."　Of this

intendment, circumcision, or the bloody circle, was but a type.)

Advancing from the source to the development of divisions of the year, if the forms

$$365 \left. \atop 364 \right\} \qquad 360 \qquad \left\{ 355 \atop 354 \right.$$

are taken as measures of year time, where the year value of 365 is based on another of 360 days, of 12 months, of 30 days each, with the intercalary number of 5 days, with the other forms arising from the number 7, as indicating the woman use, from these there can be derived, it is thought, a scheme for the construction of the Julian calendar.

(1.) One style of year is that of 364 days, based upon the menstrual month of 28 days, as follows :

$$28 \times 13 = 364 \text{ days.}$$

(2.) Another style is that of 360 days, based upon the month of 30 days, as follows :

$$30 \times 12 = 360 \text{ days.}$$

(3.) (2.) was taken as *the standard*, to which, at the close of the year, 5 days were to be added, to make up the full solar year of

365 days.

(4.) Therefore, take the standard at 12 months of 360 days, of which one month had to be the characteristic of the style under (1.), or of 28 days. Then there will be 11 (eleven) other months of 30 days each, or 330 days, with a needed surplus of 2 days, to make the full year of 360 days, and a requirement of 5 more days to make up the solar vague year of 365 days. It will be seen that the surplus days thus needed, are in number 7.

(5.) Now, to make combination of all these subdivisions, so as to make a one year circle of 365 days, divided into 12 divisions, or months, and yet so as to indicate the process, proceed to the distribution of these 7 days, as far as possible, among the months, isolating the one month of 28 days, then there will result :

(6.)   1 month of 28 days,   28 days.
       7 months of 31 days,   217   "
       4 months of 30 days, left as a resi-
            due over, of the standard year,   120   "
                                                    _____

Making a total of the Julian calendar year, 365   "
agreeably to its known divisions; which, in fact, was the
work of an Egyptian, and which, anciently, belonged both
to the Egyptians and Hebrews. "Macrobius says that
Cæsar was indebted to Egypt for his correction of the cal-
endar: 'Nam Julius Cæsar . . . siderum motus . . .
ab Ægyptiis disciplinis hausit.'" (Rawlinson's Herodo-
tus, note 6 to Book II, chap. 51.) See also Sharpe's
Egypt, Vol. II, p. 52.

The Possible "Heel" Meaning of the 217 Days.

(b.)   The word heel, of which, or as to which, the real
substance is placed as noted in the Hindu picture of the
Garden of Eden, is also of very great moment in the Hebrew
glyphs. It is the name Jacob (יעקב, or Jah-is heel), who
notoriously, in his children, was the founder of the year of
12 and 13 months. (See Nork, Wörterbuch, under
"Jacob.") It is used significantly, among others, as to
these very relations, in the garden description, in the phrase
" Thou shall cover to it a head, and it shall cover to thee a
heel." It is seen that the heel is placed before, as touching
the mouth of the pudenda. In the above scheme for the
formation of the calendar, the mouth of the pudenda is
taken as the woman month of 28 days. Then there is
taken seven months of 30 days each, plus the distribution
among them of a week of seven days, in all 217 days. In
Hebrew, the word heel is עקב, okbv, the character values
running with the word being 712, or, in the reverse, 217 ; so
that this heel standing before the woman month of 28, as a
foundation, may be added to it, as, in fact, an additional
value of 217 (or 712) of the pudenda, the two amounting
to 28 + 217 = 245 days. For another style of calculation
to make up the standard year of 360, there will be lacking

115 days; the 360 being, perhaps, indicated by the spreading tree top over the woman-man's head, indicating *rūsh*, or 213, or, as the number 113, the diameter 36 or 360. Then $28 + 217 + 115 = 360$, and adding the epagomenai 5, the year value becomes 365. Thus this *heel*, or 217, seems, by change, to become the pudenda itself, with 28 (and, as has been noted, Dr. Donaldson ascribes this meaning to the word).

This leads to hazarding a suggestion as to possible determinative sentences in *Genesis* as to this purpose. It is stated in the *fourth* chapter : "And she conceived and bare *Cain*, and said, I have *measured* (otherwise, *gotten*) a *man* (113), even Jehovah." It is extraordinary that, in the Hebrew, the word *Jehovah* is here *in apposition* with the word *man*, there being no such reading, by possibility, as "*from the Lord.*" *Man*, as 113-0, is circumference to a diameter of 360 ; and *Jehovah*, for one of its symbolizations, is *the year*. Now, the pudenda, or woman, having become $28 + 217 = 245$, it requires just 115 days to make up the full complement of the perfect standard year of 360. Now, she says as to Cain, that *having* borne him, she has measured a *man*, or a circumference to a diameter of 360, even the perfect year, or Jehovah ; possibly meaning that she had produced the full complement to make up that amount, or, in other words, that in bearing Cain, the full standard year was completed : for the value of the word *Cain*, קין, is, as the letters run, 115, or just the number required to make this complementary number good. This view is strengthened by that which follows consecutively on this—viz., the birth of *Seth* (or שת, *the year*), and the birth to him of *Enosh*. It is stated : "And to *Seth*, to him also, there was born a son ; and he called his name *Enosh :* then began men to *call themselves Jehovah.*" The two passages are, beyond doubt, connected together for an occult purpose, by, in one, the term "*measuring a man even Jehovah ;* " and, in the other, the term "*men calling themselves Jehovah :* " for these are the only such uses of the word "Jehovah" in all the Bible. Seth being, as the word

can be taken, the *year* (Fuerst under שׁנה), the name of his
son *Enosh*, or אֱנוֹשׁ, gives the other and two final values
of the year, in the expression of the values of the letters,
as they run—viz :

$$365 - 1$$
$$א - נוֹשׁ;$$

where there is the full vague year, with the unit *one*, by
which can be taken the form $365 - 1 = 364$. In this
special connection, the word Jehovah must be taken as the
glyph of the perfect year circle of 360.

The above Use somewhat strengthened by the Zodiacal Sign of the Fishes.

(*c.*) *Man* and *woman*, in the garden scene, being but a
play upon the value 113, on which 355 is raised, the other
scheme connected with the *pudenda* of the woman is but a
play upon the use of this number as a foundation, the ram-
ifications of which have been somewhat set forth. The
above method of construction of the Julian calendar is in a
measure clinched as rightly taken, when the character sign,
or symbol of the month of 28 days, or the *menstrual*
month, is considered. On the astronomical charts, the sym-
bol of the month of 28 days is the *fish*. In the glyph of
Jonah and the fish, the Hebrew name for Jonah is also that
of the *dove*. This is but a play upon the ark of Noah and
the dove. Jonah goes into the fish's belly, and, correla-
tively, the dove goes into the ark. In the description of
the flood picture, the word *dove* is used just five times. The
value of the word dove, or Jonah, is 71, and 5 times this
value is 355, or the circumference value under considera-
tion. Now, five times the value of the *man*, or *aish*, is
$113 \times 5 = 565$. The word for *fish*, or *nun*, is 565, also, or
in fact, the multiple of 113, this very diameter value. In
this symbol of the month of 28 days, the reference is very
salient, as the astronomical sign of this month in the ancient
zodiac was that of *two fishes*, or $565 \times 2 = 1130$; and, as
has been shown, $1130 + is$ circumference to a value of 360,
the value taken as standard for *the year*. Then, indeed,

the sign of the menstrual month of 28 days is 360; but
this month is based on the pudenda as 7, and as a time
measure this is also the heel, or 217. $28 + 217 = 245$, and
$360 - 245 = 115$, or Cain, of whom the woman says he is
the measure of Jehovah (or even Jehovah himself), which
can stand for the *year circle*.   Then 360 being the stand-
ard, and 28 and 217 being already had, to make the full
vague year requires 120 days, or just 4 months of 30 days
each, so that $28 + 217 (= 31 \times 7) + 120 (= 30 \times 4) = 365$,
the Julian year in its known divisions.

The word Paradise, as having a Bearing on this Subject.

Another confirmation of the time birth use of the Garden
of Eden is to be found from kabbalistic sources, in the
meaning of the term *Paradise*.   This word, so far as com-
mented on, has no meaning, and is supposed to be derived
from a foreign source.   By Fuerst, it is a word used for
metaphysical purposes, or for mystic uses.   It is a word for
which the reputed authority of the Savior is given as being
correctly used for the heavenly Garden.   It is the word
used for the Garden of Eden by the Seventy.   The mean-
ing of the term is a very simple one.   It is a Hebrew com-
pound of the verbal *Pārad*, פרד, *to divide*, and the ap-
pended letter *samech*, ס, signifying the circle bounded by
one side of a square.   The letter *samech* stands for 60, and
the face of a square being 60, the full cube (to represent the
full sphere) having 6 faces, would represent $\overline{6 \times 6} = 360$;
so that the term *Pardéss*, or *Paradise*, would signify the
division of the circle of 360.   In fact, Kabbalism takes the
samech as the divided circle, which the Hebrews repre-
sented in plane forms, as of the square for circle, and as
of the cube for sphere.   Taking the Garden of Eden, under
this *Paradise* use of 360, then it becomes the year value
of 360 days of 12 months, of 30 days each, as a standard
on which to construct the changes mentioned through the
man-woman.   So, also, 60 designates the height of the
king's chamber in the pyramid, as also $\frac{1}{4}$ its base side.

*The Heel Value, appearing as Connected with the Meas-
ures of the Queen's Chamber.*

(*d.*)   *Heel* is, as said, 712, the reverse use of 217 having
been used above. Making use of the value as 712, it
adapts itself directly with the pyramid measures in the
queen's chamber, for

56.5 : 177.5 :: 72 : 226.1946 :: 226.63 : 712;

or 712 is thus exhibited as a circumference to a diameter of
226.63, which is the length of one of the sides of the
queen's chamber in this pyramid. It is a very curious
circumstance that the length of the opposite side of this
room is given at 227.+, and, in fact, the Hebrew word for
membrum virile is זכר, or, reading its values in the reverse,
227. It is very curious also that 217 (*heel*) × 3 = 651, or,
numerically, recurrence of the *Phœnix* time period, marked
by the crossing of the disc of the sun by the planet Mer-
cury ; as also, by Parker, the complete travel of the mag-
netic pole about the earth.

(*e.*)   How strange it is that, whether the keys of these
matters, as connected with the Garden, are taken from the
narrative, or from numbers, or from the elemental geomet-
rical elements, the *phallic* use is always to be found as the
underlying one. The Parker forms rest on the relation
(transcendental) of the equilateral triangle, and of the
circle, as being at the opposite extremes of nature ; and so,
because the former *is* measurable, the latter through it
can be made measurable. The measure itself becomes
manifest in terms of the square. Now, by Kabbala, of the
interlaced triangles, the one with the point down is female.
So is the circle. The pointed obeliscal shaft was squared,
and was universally looked on as phallic. The uses then
carry these emblems as the enunciations of the uses of
these geometrical forms. It is the phallus which is the
vehicle of enunciation ; and truly enough, as the *sacr*, or
carrier of the germ, its use passed down through ages to
the *sacr-factum* of the Roman priest, and the *sacr-fice* and
sacr-ment of the English-speaking race. It is perfectly

true that, anciently, even with the Hebrews, the highest
religious or spiritual types were (to us grossly) sexual.
The Christian type of a spiritual birth was, by the rite of
baptism, a wonderful refinement, while the symbol of the
same means of birth. But more anciently, the same type
was, by circumcision, a right performed on the *sacr.* It,
too, symbolized a birth, or rather marriage, indicative of
birth. The great symbol was in the shedding of the blood
of separation, and yet of union, typifying generation by
marriage.

As this is descriptive of a simple fact of ritualism, its
force, as casting light on what has been said as to marriage
conversation, is manifest. A wonderful illustration of the
underlying meanings of the rite, as sexual, can be offered.
When the sons of Jacob offer conditions to the Scheche-
mites, they say (Gen. xxxiv. 14) : "Der eine vorhaut hat,
denn eine schmach wäre das für uns," which is a better,
because more literal, translation than the English. But
the word *schmach*, in the English, " for that (*were*) a *re-
proach* to us," is not a literal, nor is it a good translation.
The Hebrew word is חרפה, *charaphah*, which is translated
schmach and *reproach*. The *primary* and *real* meaning
of the word is " (1.) prop. *fissure*, *split*, therefore *vagina*,
female pudenda." (Fuerst.) The proper translation is :
For he—" who has a prepuce,—that (or the prepuce, הוא)
is a *mark* of a vagina to us (כי־חרפהלנו)." In other words,
and in short : He who has the prepuce, *is a woman* to us.
This idea is continued to modern times, for Lane (at the
time of his translating the Thousand and One Nights) no-
tices, in a note, as to the preparations for the performance
of the rite of circumcision of youth, that, up to the time of
the ceremony, they are paraded around, *dressed in girls'
clothes*, or, to use his expression, in *feminine attire*. The
type of the spiritual rebirth, by circumcision, was the
shedding of blood in the consummation of the marriage
rite. This view is fully enforced. Under חתן, *chathan*,
Fuerst says :

" Properly, one allied, married ; hence (1.) at a marriage feast,

a *bridegroom*, who rejoices in conducting home the bride, *Is.* 62, 5, and, like the latter, exults in that day (see כַּלָּה), *Jer.* 7, 34; 16, 9; 25, 10; who wears a chaplet, *Song of Sol.* 3, 11, and encircles his head like a priest, *Is.* 61, 10; who, with joyful spirit, and full of life's enjoyment, goes forth from the bride-chamber (חֻרְרְחֻפָּה) with the feeling of vigor, *Jo.* 2, 16; *Ps.* 19, 6; after he has become, in the wedding night, by the offering of the maiden's blood, a חֲתַן דָּמִים, *chathan damim*—i. e., one *allied by the maiden's blood* (*Ex.* 4, 25, 26), an idea which was subsequently transferred to circumcision. (2.) *A bridegroom of circumcision—i. e., who is allied to God by the dedication of the blood of circumcision, called from the consummation of marriage.*"

APPENDIX V.

*The Flood and the Ark of Noah, with their strange
Kabbalistic Biblical Relations.*

§ 93.   It must be borne in mind that the substance of the
Old Testament lays in the books of *the Law*.   All the re-
mainder is but expansion, explanation, targums, enforce-
ments, etc.   The *Law* is divided into the framing of the
ritual, and the enunciation of moral precepts, as the cor-
related enforcements of the law in the workings of the souls
of men.   There is far more space taken up in the estab-
lishment of the ritual than in the inculcation of the moral
precepts.   The ritual properly rests upon the construction
of the great pyramid, with its contained measures.   The
building of the pyramid in the books of the Law occupies
all the first chapters of Genesis, to the construction of the
ark of Noah.   The determinatives marking the completion
of the pyramid structure are very marked, and are con-
tained in very brief compass.   The Parker and Metius
measures, in the queen's chamber especially, and elsewhere
in the pyramid, unfold the Jehovah, or, more properly, the
Mosaic or Pharoah measures of 113 to 355.   It would
seem, then, that the queen's chamber answers to a special
part of the Biblical Garden of Eden.

The Biblical Containment of the Pyramid Structure.

(*a.*)   It has been shown how the numerical formulations,
on which the pyramid is to be constructed, are to be found
in the hieroglyphic construction of the Garden of Eden.
Leaving out that which intervenes as having no recog-
nizable key of solution, the *determinatives marking the
completion of the pyramid* as to its mass, are, as above
stated, very marked and strongly outlined.

From Adam to the *flood* embraced an interval of 1656 years (or shanahs, or 355's). It is most likely that these numbers had a use, just as they read in value; but there was another and kabbalistic use of, on occasion, reading a value *backward*, or, for 1656, reading, as the more occult and more exact meaning, 6561, and this is the Parker square, the source of the enlarged measures of the pyramid of Egypt, as has been fully shown. Such a use, were it intended, should be accompanied by other *determinative* marks of the correctness of its being thus taken. In this instance, these are abundant enough, and salient enough, and far-reaching enough. Some of them may be given.

The use of the names Shem, Ham, and Japhet, as Determinative of Pyramid Measures, in connection with the 600 Year Period of Noah, and the 500 Year Period to Shem, Ham, and Japhet.

(*b.*) Noah, or the *Stop*, or *End*, or *Rest*, was 600 years of age at the time of the flood (years, *shanahs*, 355 × 600 = 213, *Rāsh*). 6561 is the source of the enlarged values of the pyramid as seen. Now, 600 is just the circumference to the height of the king's chamber multiplied by 10, or 190.985+, or to the $\frac{1}{4}$ the base side of the pyramid as 190.985+ feet; and the variation on this, or 190.237+, raised from feet to inches, and multiplied by 4^2, to equal the variation on the entire circumference of the pyramid, equals the true solar year; while the correlations of this value give the earth's diameter in miles. So also this 600 is the period of Divine incarnation, by the conjunction of the sun and moon, as by Cassini:—that measure of which *Christ* was the foundation, in 318, and the measure of transfer onto the celestial circle of 360°, in the number 608.

But this period of 600 years is signalized by another of very great value—viz: "Noah was (500) five hundred years old, and Noah begat *Shem, Ham,* and *Japhet.*" (Years, *shanahs*, 355 × 5 = 1775.) This is a great determinative sentence. The number five (5) is the ה, or the

womb, or fructifying number; for the rabbins have a say-
ing that God made all things out of the letter ה.   Two of
these fives in the center of the Garden were equal to the
numerical value 10, which is the perfect *one*, or *Jah*, which
is the number of the holy of holies, in its divisions by the
cherubims, and which is a circumference to the *Christ*
value of 318.   The pyramid thus shadowed forth, in its
familiar number measures, is now strongly *lined out*, be-
yond all mistake, by use of the power (or number values)
of the expression of the three names of the sentence—viz.,
"*Shem Ham, and Japhet.*"   The Hebrew expression is—

<div style="text-align:center">

(1.)　　ם　　ש

　　　　ם　　ה

　　　　　　　,

　　ת　פ　　　ו

</div>

Give the character values to correspond with this position:

<div style="text-align:center">

(2.)　　4　　3

　　　　4　　8

　　　　　　1

　　4　8　　6

</div>

And let these values be read as they stand, thus: 444 is the
numerical value of the side of the base of the pyramid, *in
cubits* (or *cherubims* = 222 + 222 = 444); 381 is, in feet,
the half base side of the pyramid; and 486 is, in feet, the
height of the pyramid:—all in the standard measures of the
same, as coming from the original Parker elements, which,
in the construction of the Garden of Eden, have been seen
to be shadowed forth, by the use of the Metius values of
113 : 355.   And so, the work completed, or the pyramid
mass outlined, it was the completion of the grand *Stop*,
or *Rest*, or *Noah;* a condition which, by Bryant, was the
origin of all mythology.

Method of Calendar Correction contained in the Flood Narrative.

But while the means were occultly being laid for the
exact determination of cosmical phenomena, such as astro-
nomical times and earth measures, agreeably to the Parker
method, to co-ordinate, it would seem also that the narra-

tive contains other methods more popular, though less
exact.   The description of the *flood* seems to contain cu-
rious methods for the correction of time periods, and the
fastening them to the earth.

Correction of the 600 Year Period.

(*c.*)   One of the commonest methods for the computation
of time was by taking the number of degrees of the celes-
tial circle, for the number of days in the year—viz., 360
degrees were made to stand for 360 days.   Correction was
made by the addition of 5 days, called *cpagomenai*
(ἐπαγόμεναι ἡμέραι).   Thus, counting to the end of the ce-
lestial circle of 360 degrees, for 360 days, there was made
a *stop*, or *rest*, or *Noah*, and five days were allowed to
pass by without count.   As the day was marked by the
rising and setting of the sun, the giver of light, and the
circle of the day, the process was symbolized by, as it were,
placing five days in *a box or ark*, thus consigning them to
oblivion, by blotting out the light, or letting the day pass
without count.   It was the necessary step to the rebirth of
the year.   The process was that of setting a watch by the
sun.   If the watch has gained, say, five minutes on the
sun, correction will be made by *stopping* the watch for
five minutes, and then starting it again.   The similitude
between the watch and the sun lays in the connection of
the passage of the sun through the signs, as it has relation
to the seasons; that is, from year to year, the sun's place
in the signs should be accompanied by a corresponding
condition of the seasons, whatever that might be, as spring,
summer, autumn, or winter.   If there is a constantly re-
curring need of correction, the quantity should be known,
so that, being made at the appropriate time, the coalescence
between the sun in his signs, and the proper season, should
always be maintained.

It is very evident that, prior to the time of the flood, as
narrated, the 365 day value of the year was known; and
it may be taken that the correction, by means of the epa-
gomenai, was in use.   The relation of the 365 day period

to the 364, or luni-solar year, seems to be pointed at in the name Enosh, or 365 — 1, as seen, especially as the name שנה may be taken as *the year*. Also, by Philo, Enoch, son of Jared, was the father of the solar year, marked by the 365 years of his life. The period of the flood seems to mark the *Stop*, or *Noah*, for a greater correction. If the correction of 5 days in the year be followed some length of time, it will be found that the seasons will begin to fall back $\frac{1}{4}$ of a day a year, or a whole sign in 120 years. Now, the celestial sphere, with the earth, was divided into 12 compartments, and these compartments were esteemed as *sexed;* the *lords*, or *husbands*, being, respectively, the planets presiding over them. This being the settled scheme, want of proper correction would bring it to pass, after a time, that error and confusion would ensue, by the compartments coming under the lordship of the wrong planets. Instead of lawful wedlock, there would be illegal intercourse, as between the planets, "*sons of Elohim*," and these compartments, "daughters of H-Adam," or of the *earth*-man; and, in fact, the 4th verse of 6th Genesis will bear *this* interpretation for the usual one—viz: "In the same days, or periods, there were untimely births in the earth; and also behind that, when the sons of Elohim came to the daughters of H-Adam, they begat to them the off-spring of harlotry," etc., astronomically indicating this confusion. Such being taken to be one of the objects of the glyph, the astronomical period taken is that of the *Stop*, or *Noah*, which was 600 years. How many days would have to be put in a box, or ark, as consigned to oblivion in count, to work the correction of this period; so that *the seasons*, now in confusion with respect to the planets, or signs, lording over them, would come back to their proper places in the original scheme, or every woman come back to her proper lord? Or, how long should the watch be stopped before starting again, at the corrected period? The number of years being 600, the period of confusion,

or error, at $\dfrac{1}{4}$ of one day a year, would for this time amount to

150

days, as the amount of the *Stop*, or *Rest*, or *Noah*. Truly enough, this was just the length of duration of the flood over the compartments of the earth, wiping off the old marks, and again setting the seasons right with the stations of the sun.   The idea conveyed by the termination of the flood was that the scheme for the correction of the 600 year cycle was perfected; and the whole is contained in the closing verse of the 8th chapter, which is, as it were, a general determinative of the process, use of the same, and the result.   The Lord, or Jehovah, says, as it can be read : " Circling, winding, or turning in circles, all the days or periods of time of the earth—viz., *seed time* and *harvest*, and *cold* and *heat*, and *summer* and *winter*, and *day* and *night*, they shall not be separated from *the accomplished condition of correction*."   They should not cease to be in their proper and appropriate places, with relation to the sun.   Before this, by error, the seasons, by name, had become inappropriate to, or incongruous with their meanings ; but now, harvest, by name, should apply to the actual season of harvest ; summer, to the actual season of summer, and so on, without further change or alteration, for the proper amount of correction and its use was now known.

The fixing a Limit for the Closing and Opening of the Year at the Winter Solstice Point, by the Figure of the Subsidence of the Flood and the Grounding of the Ark.

(*d.*)   But while a cycle correction for 600 years was thus made, it seems to have been upon such grounds as to admit of accommodation to a fixed point or location in the circle of the simple year.   Bearing in mind the method of correction of the 365 day year on that of 360 days, by means of the epagomenai, or the putting of 5 days in a box, a scheme can be suggested as of ancient use of deter-

mining such a point and location at the winter solstice.   In
the form

$$355 \qquad 360 \qquad 365$$

360 being the mean between 355, the abstract circumfer-
ence value (connecting the year calendar forms with the
Garden of Eden and the pyramid forms of 113 : 355 and
20612 : 6561) and the solar year value of 365, because of
this, seems to have been used as a standard of measure of
time.   The equivalents of these forms are to be found in
the numbers 70, 71, 72, and 73, by considering them as
circles, to be subdivided in five units for each unit of their
values, respectively, as 70 × 5 = 350, 71 × 5 = 355,
72 × 5 = 360, and 73 × 5 = 365.

(d.) (1.) Take now the standard measuring circle of
360, and fasten some point on it to correct the year time to
some phenomenal point of the solar year proper, say the
winter solstice.   Then, having counted 360 days to this
point, the five epagomenai days are put in a box, or blotted
out, *with respect to this measure circle;* but, on the other
circle of 365 days, are continued on to make the full solar
year, now made correct with the seasons to a definite end
or stop ; from whence, after the lapse of four years, the
bissextile correction of one day can be made.   This seems
to be a scheme of subordinate showing under the large cor-
rection of the 600 year cycle in the flood narrative—that is,
while, upon some base of calculation, the 150 days of the
prevalence of the flood was the correction of the 600 year
period, denoted by the beginning of the rain of 40 days +
110 days of the bearing up of the ark, this very subdivision
of time was also to denote a point of the year in which the
correction should be marked, as thereafter to be the close
of one and the beginning of another year.

(2.) The detailed relations of the flood are interesting.
As usual in Hebrew, there were different words expressive
of the same idea in the English translation.   The word
"*flood*" is used in various places, but the special word in
Genesis is *mabul*, or *m'bul*.   The root word is *bul*, and this
was the name of the month, or sign, of the occurrence of

rain, or of the *rainy month;* and, as one of the moon, run from the new moon of November to that of December (Fuerst.) This month is set down as the eighth in the Jewish calendar, or it was probably the third month of the ancient year, extending to the winter solstice, or birthplace of the year; just where, for correction, the stop should be made—viz., at the end of the old year, by the ark being raised up from the earth so that the earth might pass on under it, while it remaining still, or *stop*, or *Noah*, would at last, with the sinking of the waters, drop at that time, and place, on the earth, where the signs were thus made to become correct with the seasons. This place was similar with our Easter period, which, regulated by lunar time, oscillates between certain fixed solar limits. The count for correction of the great calendar period of 600 years, run from the entering the ark, or box, and continued 150 days; but this latter space of time was divided for some reason. There is a count from the 17th day of the second month (sun in Scorpio) of 40 days, which would carry to the 27th day of the third month, or Būl, or the solstice month, as presented on the Egyptian charts. It looks as if the word for *flood* had reference to this month word; and apparently this view is confirmed.

(3.) Noah entered the ark, or Theba, or box, on the second (2d) month, the 17th day of the month. Referring to Seyffarth's Chronology (p. 211) he says: "November 8th, Julian style, i. e., 17th day of 2d month, the deluge commences in the 600th year of Noah." It seems that Epiphanius specifies the date on which Jesus received his baptism at the hands of John, on the 8th November likewise, so that Jesus went down into the water, or type of the pit, or womb, or of death and birth, on the anniversary of Noah's going down into the hollow of the ark. Seyffarth (same, p. 182) says:

"The baptism of Christ, and the beginning of his prophetic ministry, are, first of all, determined by the testimony of St. Luke. For, since the fifteenth year of Tiberius, in which the Baptist entered upon his prophetic ministry, is, by our present

calculation, brought down two years later (than by Petavius), Christ must have been baptized in the 29th year after the commencement of our era, 'at an age of nearly (ὡσεί) thirty,' to enter, *forty days later*, upon his prophetic office. On the same day, the 22d December, Christ was thirty years of age ; and as Christ was, as he says, ' born under the law,' and consequently obliged to enter the priestly office on the first day of the 31st year, he must have commenced his public ministry on the 22d of December, A. D. 29, and received his baptism on the 13th November (that is, 40 days earlier). *Epiphanius specifies the 8th November, simply because, on account of the shifting of the epagomenai (the intercalary days) his 8th November corresponds with our 13th.*"

This quotation is made to show how the 40 days from the 8th November terminated at the limit of the 22d day of December, of our day, the point of the winter solstice, under the explanation of Seyffarth, of the correspondence of the 8th day of November of Epiphanius, and the 13th November of the solar year, by use of the five intercalary days ; which would go to show that, by Epiphanius, the 360 year period closed November 8th of the solar year, or the 17th day of the 2d month, then by blotting out or reserving from count five days, the 17th day would continue over this period, so that it (the 17th day) would correspond with the 13th day of November of the solar year. Just what has been said above as the count on a circle of *one kind* (360) *stopping*, the days thus blotted out would still be counted on, *on the circle of another kind* (365) ; in this case to the commencement of the flood.

(4.) Now, Noah entering the ark on this 17th day of the 2d month, or the 13th of November, solar year time, it rained 40 days, the ark not as yet being lifted up. At the end of 40 days the ark is lifted up, and at the end of 150 days from the beginning of the flood (the full correction of the 600 year period), or 110 days after the end of the 40, it descends on the peaks of the mountains, which could not have been very high, as the depth of the flood is stated at 15 cubits, or 25+ feet. This arrangement is simply to designate *where in the year* the landing was to take place,

viz., December 22d, the winter solstice, for it is to be con-
sidered that it was at that point when it was lifted up, and
afterward simply remaining stationary, while the earth
passed on under it, the remainder of the time of the 150
days—viz., 110 days—was perfected, or brought to a close,
the waters abated, and the ark made its landing on the
22d of December of the solar year, the winter solstice.
This then was the *great turning point*, or στροφαίος, or
hinge, fastened by the flood calculation, in a calendar way.

(It is to be noted here, what is constantly the case, that the
data connected with the working out of some one particular phase
seems to be fitted for radiating off to the accomplishment of some
other or others. The number 110 is extraordinary in other rela-
tions. Joseph died in Egypt, being " an hundred and ten years
(110) old ; and they embalmed him, and he was put in a box, or
ark, in Egypt." (Gen. 50, 26.) The narrative of his burial is
reserved to 24th Joshua, 32, as it were, to be mentioned in con-
nection with the death of Joshua, the son of Nun, of whom it
says, in the 29th verse, that he " died, being an hundred and ten
(110) years old ; " showing a bringing together of this number
110, thus twice used, and once as connected with an ark or Theba.
So, as to this number : $365 - 354 = 11$; and $365 \times 11 = 4015$,
and $355 \times 11 = 3905$; and $4015 - 3905 = 110$, this very number.
This shows some subtle use, as to which Joshua, as the son of
Nun, or $565 = 113 \times 5$, may have been connected. It has been
shown that $27 + 217 = 245$ days $+ 115$ (Cain) $= 360$. Taking
the same ground form, $27 + 217 = 245$ days $+ 110$ days $= 355$
days, or the Dove year, or 71×5 ; and this is probably the use
of the 110.)

Other number Rests, or Stops, in the Flood Narrative.

(*c.*) It is a curious matter to mark some of the other
uses of the number rests in the description of the flood.

" The history of the deluge is based upon the solar
months of 30 days each " (Seyffarth, Chronology, p. 170),
with which statement the foregoing workings agree. From
the 1st day of the 1st month, therefore, to the 17th day of
the second month, was 47 days. The flood prevailed
150 days. Then *the raven* and *dove* were sent forth,
the dove returning. A lapse of 7 days. The dove was

sent forth again, and returned with the olive branch—1 day.
Then a lapse of 7 days. That is, in all, $47 + 150 + 40 + 7 + 1 + 7 = 252$ days. Then, to make a full solar year of 365 days, would require the additional number of 113, or the famous diameter value of 355, or the Hebrew word for *year*. But to make this year of 355 days would require an additional number of 103, or one-half of 206, one of the lengths of the queen's chamber.

If, however, instead of following the count thus, in days, as mentioned, the months and days be taken, then—

" On the tenth month, were the mountains seen ;"

10 months,	300 days.
"And it came to pass at the end of forty days,"	40 "
"And he stayed yet other seven days,"	7 "
Dove sent out and returns,	1 day.
A lapse of seven other days to the end,	7 days.
Or a total of	355 "

which is the lunar year circle itself; precisely a similar occurrence with that of the sums of the ages of Abram and Isaac, being 355, showing a power of unification of many various matters with one concrete form.

The Number Values of the Birds.

(*f.*) The term Raven is used but once, and taken as *cth-h' orebv*, את־הערב $= 678$, or 113×6: while the Dove is mentioned five times. Its value is 71, and $71 \times 5 = 355$. Six diameters, or *the raven*, crossing, would divide the circumference of a circle of 355 into 12 parts or compartments ; and 355 subdivided for each unit by 6, would equal 213-0, or the *head* in the first verse of Genesis. This divided, or subdivided, after the same fashion, by 2, or the 355 by 12, would give 213-2, or the word B'rāsh, בראש, or the first word of Genesis, with its prepositional prefix, signifying the same concreted general form, astronomically, with the one here intended. Moreover, $213 \times 2 = 416$, or, as shown, the width of the descending passage-way into the pyramid.

Mount Ararat, or Jared, or Yard, and its Significations.

(*g.*) (1.) The mountain on which the ark rested was called *Ararat*, and this has been shown to be Mount Jared, יֶרֶד, or the *Mount of Descent*, a figurative expression for the basic source of calculation ; as it is the *square yard*, four of which, or the one solar day value, constitute the Adam form of extension of the Garden of Eden, as based on the square of $\overline{3 \times 3} = 9$, and $\overline{6 \times 6} = 36$; the key enlargement of the Parker and Metius forms, to work a change to the factor 6, to convert circular into astronomical and earth measures, in the squared or plane form. Here it would seem to imply *The Mount of Descent*, having reference to the like uses of the various kinds of measures found in the pyramid mass ; and it is to be likened to the three mountains in one—viz., of *Ibarim*, or *heaven-dividers*, or *Hebrews;* of *Nebo*, or the *wisdom behind the arch of the sun*, and of *Pisgah*, or the *apex whence one would stand to review, or look down on, a system of divisions made*, which were those, combined in one, on which Moses went up to review the astronomical and geographical work which he had done.

The Place of Ararat, or Mount Jared, in the Adamic Chronology.

(2.) Take the place of Jared as the mount of descent, in its position, for another phase, in the Adamic chronology. As to its order, it will be thus found :

1. Adam ; 2. Seth ; 3. Enosh ; 4. Cainan ; 5. Mahaleel ; 6. Jared ;

7. Enoch ; 8. Methuselah ; 9. Lamech ; 10. Noah ; 11. Shem, Ham, and Japhet ;

where Jared stands as the connecting link between two systems of 5. Two 5s = 10, and 10 is circumference to 318+, and $318 \times 6 = 190+$, and 190+ is diameter to a circumference of 6, and 6 is the factor connection between circular and plane shapes. Here Jared, or yard, or $6^2 \times 6^2 = 1296$, stands as the center or apex of the system. Curiously enough, as

the 6 days of the week, and then the 7th day, stand as the base of various calculations as shown ; so here, Jared, the *yard*, and Enoch, the father of the solar year (as 365), stand, respectively, as the 6th and 7th in the order of this table.   Add the ages to Jared, inclusively, and the sum, *up the mount*, to give its character, in one phase, is

$$130 + 105 + 90 + 70 + 65 + 162 = 622 \text{ years.}$$

622 is *the sum of two men*—viz., $311 + 311 = 622$; but while 311 is *man, aish*, it is also *the woman*, as $5 + 300 + 1 + 5 = 311$; and, as another form of *aish* is 113, we have the 622, as exhibiting—

$$311—113,$$

or the *woman-man*, or *man-woman*, or hermaphrodite form of the source of the Garden of Eden, reproduced, which, in its extension under the Adam form, we have seen to be Jared, or *yard*, squared, and multiplied by 4.   Thus the numerical enunciations of the types are seen constantly to *head* the various phases ; from whence, in detail, the various ramifications arise from the concrete form.   Reverse the reading of 622, as 226, and this is diameter to the circumference of 712, the *heel* of Jacob, and found in the queen's chamber measures.   The use of 113, as a measure, is reinforced in its use in the post-Adamic chronological table, where, *of Peleg*, it is stated that in his days the earth was divided.   The value of Peleg, פֶּלֶג, equals $80 + 30 + 3 = 113.$

Astronomical Personification.

(3.)   Thus, Ararat is shown to be *Mount Jared*, or *yard*, and also to be the monumental sign of the *mark in the year*, of its changes from old to new, or of the hinge or cardinal point of the winter solstice, or the 22d December.   What is the *personification of this?*   Is it not Janus Bifrons of the Romans?   Who stood with double face, looking upon the past, and, prophetically, upon the coming year?   If there is any one thing clearly shown in the books, it is that the Roman Catholic Church holds Janus Bifrons as St. Peter.   It was Peter that first hailed Jesus

as the Christ. Christ founded the Church on Peter. Peter
was but a form of Ararat, or Mount Jared, marking the
winter solstice as December 22d. While the triumph-
ant Christ, as *Mcshiac*, sat in Leo, holding under his con-
trol the cross (origin of measures), Peter's place was below
his, or at his *denial*, holding also the cross. Reference
to this is certain under the tradition of Peter being cruci-
fied *head downward*, as the *opposite* of his Lord. Peter
as a stone was the cube of that letter ה, or 5, by which the
Hebrews say that God created all things. "*Thou art the
stone*," and "*on this stone*" are the words. The Hebrew
word for *stone* is אבן, *abn*, and reading the letters as they
run, it is 125; and 125 is the *cube of* 5. Five and five are
10, or the space between the cherubims, or the *cube of* 10.
See! to make this cube of 10, or the *perfect one*, uniting
within itself the perfect male and perfect female, in their
conditions as separated from the hermaphrodite form, as
shown, requires just 8 cubes of 5 each. But the 10, as the
perfect one was Jehovah. Under the Noah form, this is
represented by 8 persons, 4 males and 4 females, going
into the ark, and Noah's name as הה, or נה, is the hiero-
glyph of this use. Then, Mt. Ararat, or Mt. Jared, or Mt.
Janus Bifrons, or Mt. Peter, or Mt. *Cubical stone of* 5,
the *foundation stone*, and the winter solstice mark as the
22d December, were all one. The whole was founded on
Peter, or 125, and in building, 8 of these cubes became the
10, or *perfect one*, or *Jehovah* (and for this use, while *abn*
is 125 as the letters run, by adding them the sum is 8);
and 10 is circumference to the diameter 318, which was the
Gnostic Christ. How strange it is that it is left to the
Epistle of Peter—1 Ephes., chap. 3, verses 20, 21; 2 Ephes.,
chap. 2, v. 5; and chap. 3, v. 6—to make reference to
Noah and the Flood. But as to Jesus, in this connection,
his baptism by John, or the dove, in the River-Dan, or Fish-
River, was an answering to the entering of Noah, or Peter,
into the ark. The 40 days elapsing to his entering upon
his ministry, corresponded to the 22d December mark of

the lifting up of the ark, and the place of its descent 110
days thereafter, whereby *all things became new*.

Other Types and Teachings.

(*h.*)   The figures, or displays, however, of one class of
problems were co-ordinately made to serve the purpose of
explanation, or the teaching in astronomical figures of
others.   A most striking and far-reaching teaching or
feature of the astronomical circle of the signs was in the
conditions of the sun, agreeably to his station in the signs
of his acquired power, and of his death.   The balanced
signs were *Aries*, the *lamb*, and the balances, ♎, opposite.
Out of Aries, the lamb, the sun now having acquired his
fructifying power, enters the sign of the Bull, presided over
by Venus, the type of love and of germination.   The bor-
der of the sign of the Lamb, then, was that of Taurus.
Opposite to this, the sun, descending from the lower edge
of Libra, or the balance, entered into Scorpio, presided
over by Mars, with his *hasta* (as Libra was by Cain, or
Pater Zadic, the Just One, who, being a Mars form, and
carrying the hasta, as the sun descends to the lower edge
of the balance, *pierces it with his spear*, just as it is de-
scribed as to Abel ; for it is not the word to slay, or kill, but
to pierce, that is there used) ; the mark of the use being not
only *to pierce*, but also as impregnating the place Scorpio,
or the gate of the woman, or Delilah, with the germ of a
new life.   The whole type was made to answer to the life
of man.   The point of greatest anxiety, and of dread of
expectancy, was of course that in Scorpio, or of the death
of the sun.   Personified, the tribe to which this sign was
appropriate was Dan ; yet it was in Dan that " we await
thy salvation, O Lord."   (The sign Scorpio, being the gate
of the woman, is opposite to the sign Taurus, *and they
meet at a point in the center of the sphere just where they
are met by the line of the balance or Pater Zadic.*)   The
place *Scorpio* was the *pit*, or the Hebrew word שיח, *shiac*,
the place of death, the door of Hades, or of Sheol.   But
true to the type, as the sinking sun was held to be a dead

sun, on entering the door of the devouring worm, the *night*, or *Lilah*, or *woman*, prepared to give birth to the new one. So, by parallelism, the soul only passed the door as a preparation for resurrection or new birth. In the heathen representations of this place of condition, under the form of a woman, over the mouth of the womb, was drawn the picture of the *scull with crossed bones*. The symbol was that of *the door of life*, as but a note of change from the condition of death. As death was to be considered the greatest evil, the place was hateful, and considered bad, and full of *sin;* so that here all that was evil, dreadful, and sinful, was the very accompaniment of all that was to be most hoped for, most delightful, and most enjoyable. This at once makes plain the unaccountably horrid qualities anciently attributed to woman, down to as late a period as the early church fathers.

The author of "The Origin and Destiny of Man," page 145, has collected various holy statements as to this: " Corpus mulieris ignis est," says a holy person. O malum et acutissimum telum diaboli, mulier ! exclaims St. Chrysostom ; Per mulierem Adam in Paradiso diabolus prostravit, et de Paradiso exterminavit. St. Augustine says : Mulier docere non potest, nec testis esse, neque fidem dicere, neque judicare, quanto magis non potest imperare ? St. John of Damascene says : Mulier jumentum malum, vermis repens, atque in Adamo domicilium habens, mendacii filia, Paradisi custodia, Adami expellatrix, hostis pernitiosa, pacis inimica. St. Peter Chrysologus, Bishop of Ravenna, says that she is malis causa, peccati auctor, sepulchri titulus, inferni janua, et lamenti necessitas tota. St. Anthony : Caput peccati, arma diaboli. Cum mulierem vides, says he, non hominem, non belluam, sed diabolum esse credite. Her voice is serpentis sibulus. St. Cyprian would sooner hear basilicum sibilantem, than a woman singing. St. Bonaventura compares women to the scorpion, which is always ready to sting man. They are, he says, arma et balista diaboli. Eusebius of Cæsarea says that woman is saggita diaboli. Gregory the Great : Mulier

recta docere nescit. St. Jerome : Si mulier suo arbitrio relinquatur, cito ad deteriora delabitur. And again : Optima foemina rarior est phoenice. And again : Janua diaboli, via iniquitatis, scorpionis percussio, nocivum genus. The church's opinion of women would be something fearful to contemplate, in connection with the necessity of their being the only mothers, sisters, and refining companions of man, were it not that this opinion was taken from these ancient glyphs and unificating necessities.

The word שיח, *shiac*, is in Hebrew the same word as a verbal, signifying *to go down into the pit*. As a noun, it also means *pit*, *place of thorns;* also, the *complaining word*. The *hifil* participle of this word is משיח, or *Messiach*, or the Greek *Messias*, or *Christ*, and means "*he who causes to go down into the pit*," a manifest attributed function of the Savior as held by Christian teaching. A very careful analysis and comparison of the Hebrew and Greek forms leads to some almost astounding developments, as to the twofold conditions of the Messianic character. Nork says most truly of Jesus, that he *never was anointed either as high priest or king*, where he is showing that the term *Christ* is not applicable to him as the *one anointed*, as high priest or king. A setting forth of the Messianic meanings will throw a flood of light on the New Testament narratives. There are two words in the Hebrew from whence the Greek word *Messiah* can be derived. The first is the verbal משח, *mashach*, or participle passive, משוח, *Mashuach*, made to read equivalently משיח, *Mashiach*, or *Meshiac*, the very word used by the Greeks for *Messiah*. This verbal means *to besmear*, to *anoint as with oil in dedication* (Fuerst). The second word is שיח, *shiac*, same with שוח. As a noun it has the meaning of *pit*, *grave;* hence, *to sink as into a pit or grave*. It also has the meaning *to speak;* hence, as substantive, *word*, or *speech*, *lamentation*, *grief*, *humiliation* ; further, to *walk among bushes*, *thorns*. The *hifil* participle of this word is משיח = *Meshiac*, or *Messias*, naturally, and without making any equivalent change whatever. Now, with what has been

said as to the *woman* character, or quality of the sign
Scorpio, which is so often confounded by the early church
fathers with the woman; especially as to its being the *pit
of the grave*, while it is the *vagina*, as indicating resur-
rection, and *new birth:* and, with the remark of *Nork*,
that Jesus never was *anointed* as high priest or king, take
this circumstance of his life into consideration—viz., *He*,
*as mortal, was never anointed but once; then by a woman;
and not as high priest, or king; but, as He said, "She did
it for my burial,"*—which of the two Hebrew words giv-
ing the term *Meshiac* is most fitting and appropriate? But
the fact is there were *two Messiahs: One*, as causing him-
self to go down into the pit, for the salvation of the world;
this was the sun shorn of his *golden rays*, and *crowned
with blackened ones* (symbolizing this loss), as the thorns:
The other was the triumphant *Messiah*, mounted up to the
summit of the arch of heaven, personated as the *Lion of
the tribe of Judah*.   In both instances he had the cross;
once in humiliation (or the son of copulation), and once
holding it in his control, as the law of creation, He being
Jehovah.   As strange as this development is, its strange-
ness is enhanced, when it is to be shown that the Greeks
had also a double form of derivation to run parallel with
that of the Hebrew as given.   Fuerst, in noticing the pow-
ers of the two Hebrew letters ה and ח, likens the first to
the *smooth*, and the second to the *rough*, aspirate of the
Greeks, and says, moreover, that ח can be taken as the
Greek χ.   Then for the double form: In the Greek there
is the word χρίω, whence χριστος, *to anoint with oil;* there-
fore equivalent to the Hebrew *Meshiac*, having the same
meaning.   Now, considering what Nork says, as to there
having been no such anointing, and what is said as to the
real anointing for *burial* by the woman, take the equiva-
lent of χ, in the rough breathing (in fact, Hadley gives χ
as the rough aspirate), and we find the word ῥησις, or χρησις,
a *word, speech* (taken as from ῥεω, and ἐρω).   Passing from
this to the other form of the *rough aspirate*, or χ, and con-
sidering these as equivalent forms, we do find χράω, " in

the earliest examples of the active, of the gods and their oracles, *to give the needful answer, give a response;*" then χρηστήριος (from χράω) *of* or *belonging to an oracle;* then χρηστήριον, *the seat of the oracle, an offering for the oracle,* generally a sacr-ficial victim, *a sacrifice, victim.* Thus the *fated sacrifice of the word.* Then came the shortened use of this form in χρηστος (from χράω), to *run parallel to* χριστος. Thus the paralleled double form is common to both languages. While, also, this is appropriate to the structure of the Greek language, Godfrey Higgins, in Anacalypsis, Vol. 1, p, 569, gives authorities confirming the fact of the double use of the two terms *Christos* and *Chrèstos.* The learning is very singular, as showing the gradual suppression and elimination of the esoterism, by which Scripture teaching has been thrown into confusion, and its real system has been subverted. The Greek of 1 Pet. 11, 2, is: "If so ye have proved that (χρηστος ὁ κύριος) *Chrèstos* is the Lord." To prove that the reading has been that of a proper name, Bishop Marsh says: "1 Pet. 11, 3: χρηστος, others χριστος." St. Paul, in Philipp. 1, 21, is made to say: "For me to live is Christ, to die is gain." Dr. Jones says of this, that the sense "requires χριστος *in the sense of* χρηστος, to correspond with κερδος (*gain*)." St. Paul seems to mean here, "For me to live is *death* (χρηστος), to die is to *live* (gain);" having reference to the resurrection in *Christ,* or χριστος. It involves the idea of *sacr*-ifice, or new-birth, by death unto righteousness, or this very χρηστος, or *Mèshiac,* condition. Justin Martyr calls the Christians by name of χρηστιανοι. And so on. To a late day, the terms *Chrèstos* and *Christos* for Christ, were used interchangeably. The two conditions were necessary to the full proportions of the whole Christian system. Jesus, as the *suffering sacrifice,* could not be the *triumphant Christ* until he had passed through the sacrificial Chrèst condition. At Scorpio, he was *Chrèstos, in the pit, among the thorns,* or *blackened rays;* but thence, passing around the circle, until the summit was attained, at *Leo* He became the *triumphant Christos, as the*

Lion of the tribe of Judah, who had subdued all things under himself. The *cross* was common to both conditions— once to denote *suffering*, and the *phallus*, and then to denote the *origin of measures*, or *Creative Law*, or *Jehovah*.

The Meshiac Condition connected with the Geographical Location of the Head-Waters of the Jordan River.

(*i.*) To the tribe of Dan, geographically, was assigned the place in which were the head-waters of the *Jordan*, or the *River-Dan* The word, in Hebrew, bears this meaning, and thus it becomes the *River of Judgment* (for *Dan* is *judge*, or *judgment*), or *Dan*, or *of Sheol*, or *of Hades*, or *of Styx*, where was located the place of judgment of the departed spirits. Therefore the river *Jordan* had its head-waters in *the springs of Scorpio*, or the gates of death, or the vagina of the woman. Baptisms in this river, as can be seen, were therefore but types of the going down into the pit, and of the resurrection therefrom. The word Jordan also may bear the analysis of the word, as ‏רד‎, *to flow down*, with an appended ‏ן‎ final, which may be taken as a determinative, in the hieroglyph, of *the fish;* for this letter *is Nun*, or *fish*, and thus determines the river as the *Fish River*.

Now, it can be seen how perfectly the Christian scheme was made to answer to its ancient prototype. When, for the first time, Jesus asks his disciples, "Whom do men say that I the Son of Man am?" (Son of Man is the Ben Enosh of Daniel, and the Son of Seth (the year) in Genesis,) Simon Peter (Simon Bar Jonah, or the son of the Dove, and also as *Peter* the *stone*, *Abn*, ‏אבן‎, 125, or the cube of 5, or letter ‏ה‎, or womb) answered, and said : "Thou art the Méshiac, the son of the living God." (Matthew 16.) Now, all this depends for its real significance on just that on which no stress would ever be laid without instruction. The verse (13) is : "*When Jesus came into the coasts of Cæsarea Philippi*, he asked his disciples, saying, Whom do men say that I the Son of Man am?" The *location* gave rise to all the rest. Cæsarea Philippi *was the site*

of ancient Dan, out of which very spot welled forth the great spring of the Jordan river. He had gone to the *localized type of the pit*, the *gate of death*, or *of Sheol*. Jesus in Dan was in the *shiac*, or *pit*. He had *caused to go there*, therefore He was the מָשִׁית, the *Meshiac*. He was enacting His going down into the pit agreeably to the ancient types and symbols. Astronomically, it was the *death of the sun*, but a death which was the precursor of the *New Sun*. The death planted life in the womb of darkness, of *Lilah*, or of Egypt, and " Out of Egypt have I called my son."

A consideration of the salient dates in the life of Jesus seems to strengthen the astronomical exposition made. From Seyffarth is to be gathered :

"According to solar months (of 30 days, one of the calendars in use among the Hebrews) all remarkable events of the Old Testament happened on the days of the equinoxes and the solstices ; for instance, the foundations and the dedications of the temples and altars" (and consecration of the tabernacle). "On the same cardinal days, the most remarkable events of the New Testament happened ; for instance, the annunciation, the birth, the resurrection of Christ, and the birth of John the Baptist." "And thus we learn that all remarkable epochs of the New Testament were typically sanctified a long time before by the Old Testament, beginning at the day succeeding the end of the Creation, which was the day of the vernal equinox." "During the crucifixion, *on the 14th day of Nisan*, Dionysius Areopigita saw, in Ethiopia, an eclipse of the sun, and he said, Now, the Lord (Jehovah) is suffering something." " Then Christ arose from the dead on the 22d March, 17 *Nisan*, Sunday, the day of the vernal equinox (Seyf., quoting Philo de Septen.)—that is, on Easter, or on the day when the sun gives new life to the earth." " The words of John the Baptist, ' He must increase, but I must decrease,' serve to prove, as is affirmed by the fathers of the church, that John was born on the longest day of the year, and Christ, who was 6 months younger, on the shortest,"—22d June and 22d December, the solstices."

This only goes to show that, as to another phase, John and Jesus were but epitomizers of the history of the same sun. under differences of aspect or condition ; and one con-

dition following another, of necessity, the statement, Luke ix., v. 7, was not only not an empty one, but it was true, that which " was said of some, that (in Jesus) John was risen from the dead." (And this consideration serves to explain why it has been that the *Life of Apollonius of Tyana, by Philostratus*, has been so persistently kept back from translation and from popular reading. Those who have studied it in the original have been forced to the comment that either the " Life of Apollonius" has been taken from the New Testament, or that the New Testament narratives have been taken from the " Life of Apollonius," because of the manifest sameness of the *means of construction* of the narratives. The explanation is simple enough, when it is considered that the names *Jesus*, Hebrew ‬, and Apollonius, or Apollo, are alike names of *the sun in the heavens;* and necessarily the history of the one, as to his travels through *the signs*, with the personifications of his sufferings, triumphs, and miracles, could be but the *history of the other*, where there was a wide-spread, common method of describing those travels by personification.) It seems also that, for long afterward, all this was known to rest upon an astronomical basis; for the secular church, so to speak, was founded by Constantine, and the objective condition of the worship established was that part of his decree, in which it was affirmed that the venerable day of the *sun* should be the day set apart for the worship of Jesus Christ, as *Sun*-day. There is something weird and startling in some other facts about this matter. The prophet Daniel (*true prophet*, as says Graetz), by use of the pyramid numbers, or astrological numbers, foretold the cutting off of the *Meshiac*, as it happened (which would go to show the accuracy of his astronomical knowledge, if there was an eclipse of the sun at that time); which fastens the event, say, of the eclipse of the sun at that time. Now, however, the temple was destroyed in the year 71, in the month Virgo, and 71 is the Dove number, as shown, or $71 \times 5 = 355$, and with *the fish*, a Jehovah number. Is it possible that the events of humanity do run co-ordinately

with these number forms? If so, while Jesus Christ, as an astronomical figure, was true to all that has been advanced, and more, possibly, He may, as a man, have filled up, under the numbers, answers in the sea of life to predestined types. The personality of Jesus does not appear to have been destroyed, because, *as a condition*, He was answering to astronomical forms and relations. The Arabian says: "Your destiny is written in the stars." So also, in this connection, while from Adam to the flood was 1656 years— a mark in the reverse reading of the Parker astronomical square, or 6561—the late Dr. Mahan, in "Scripture Numerals," shows that, from the establishing of the Levitical Dispensation to the destruction of the Temple, was also 1656 years, or, reversing again, a *terminal* square of 6561 ; thus showing the squaring out, or cornering out, of the entire Dispensation from Adam to the destruction of the temple, in the mystical values of the *measuring square*.

Other Meshiac Types and Shadows.

(*i.*) (1.) The application of the same type accounts for the means of conversion of St. Paul. He was *Saul of Tarsus* before that event; that is, he was *Sheol*, Hebrew for Saul, and Tarsus was a city founded by the Ionims, or the *people of the Dove*. He was on his way to Damascus, *the pot of blood;* and when struck with blindness, or darkness, a type of *being in the pit*, he was in *Dan*, through the territory of which he had to pass on his way. In the old pictures of the scene, he is represented as being thrown from a horse, falling backward, because of the vexing by a serpent of the horse's heels ; and the Bible says of Dan, " an adder in the path, that biteth the horse heels, so that his rider shall fall backward." The horse was, by reason of his four legs, symbol of a square, or of the four cardinal points, the one bitten being of Scorpio, or Dan, so the serpent biting the heel carries back to the Garden glyph. Saul was undergoing the Méshiac, or Chrèst, condition ; having passed out of which, straightway he preached *Méshiac*, or *Christ*, to which he had arrived by his initiation ;

and afterward his name is changed to Paul, *the Little* (so
said), or smaller type of *Christ*, having dropped the Sheol
characteristic.

It must be borne in mind that our present Christianity is
Pauline, not *Jesus*. Jesus, in his life, was a Jew, con-
forming to the law; even more, He says: " The scribes
and pharisees sit in Moses' seat; whatsoever therefore they
command you to do, that observe and do." And again:
" I did not come to destroy, but to fulfil the law." There-
fore, He was under the law to the day of his death, and
could not, while in life, abrogate one jot or tittle of it.
He was circumcised and commanded circumcision. But
Paul said of circumcision that it availed nothing, and *he*
(Paul) abrogated the law. *Saul* and *Paul*—that is, Saul,
under the law, and Paul, freed from the obligations of the
law—were in one man, but parallelisms *in the flesh*, of
Jesus the man under the law as observing it, who thus died
in *Chrèstos* and arose, freed from its obligations, in the
spirit world as *Christos*, or the triumphant Christ. It was
the Christ who was freed, but Christ was in the spirit. Saul
in the flesh was the function of, and parallel of, Chrèstos.
Paul in the flesh was the function of, and parallel of Jesus
become Christ in the spirit, as an earthly reality to answer
to and act for the *apotheosis;* and so, armed with all au-
thority in the flesh to abrogate the human law.

(2.) The same types are to be seen in the histories of
Saul and David. Saul was Sheol, the son of Kish (or of
113). *By name* he was Hades, or the pit, as Paul was
under his Saul name. He was the type of the going down,
and down he went. David, on the other hand, was the
ruddy blooming youth, growing in his strength to the be-
coming the Lion. The types are Aries, Leo, and Dan.
The determinatives of the types are, in part, as follows:
Saul was taken to be king while hunting for his father's
asses, while David was taken to be king from following his
father's flocks of sheep. The sheep mark was the sym-
bol of the sun in Aries; while the ass was the symbol of
Typhon, or the devil, lord of the descendant.

(3.) The acrostic use is to be found in the mysteries of the Bible. The 11th verse of the 96th psalm is an instance of this kind :

ישמחו השמים ותגל הארץ

" Let the heavens rejoice and the earth be glad." The first letters of the words, put together, form the great word יהוה, or Jehovah. This play upon words is confirmed as proper by Christian usage, in the acrostic forming the *ichthus*, or *fish*, as Christ.

As the words " Shem, Ham, and Japhet," have been shown to be determinatives of the pyramid structure, so they are types, setting forth, by way of *acrostic*, the Jesus and the Christ meanings. The first letters of the names are S, H, and I.

(1.) These, read in the reverse, are IHS, the monogram of Christ, as given by St. Barnabas. The values are, by adding, equal to 318, and this is the numerical value attributed to Christ by St. Barnabas, meaning a diameter to a circumference of *one*.

(2.) Placed agreeably to the reading of 318, and the arrangement of the letters becomes changed to SIH, or שיה, Hebrew *shiac*, the *pit*, or source of the *Méshiac*.

(3.) Changing the *breathing*, and the ה becomes ה, or changed into the Latin or Greek ε, and there results IES, or *Jes*-us.

(4.) If the character values of IHS are taken in the reverse, they are 381, the half base side of the pyramid.

Jesus *was I-am* before Abraham was born. But, further, since the *shiac* was the *pit*, and the pit was in the sign Scorpio, and the *shiac* is convertible into IHS, one great monogram of Christ, the whole becomes explanatory of the great badge of the Roman Catholic Church ; and which, according to Godfrey Higgins (Anacalypsis, Vol. II., p. 202), is placed on the breast of the Pope. The badge is—

$$\overparen{X\ P\ \Sigma}$$

or it is the monogram of the earthly condition of the repre-

sentative of the spiritual *Christ*.   It is the Jesus condition
of *Chréstos*, or χρηστος, or descender into the pit, under the
astronomical sign Libra.   The sign Scorpio, which is that
of the *Shiac*, this birthplace, or causer of the Christ con-
dition, is directly under and bordering on Libra.   Hence
the glyph.   The Church temporal—i. e., every member
thereof—headed by the Pope, *must* obey this sign before
assumption can be made of the blessed Christ condition.

APPENDIX VI.

Grand Determinative at the Close of the Flood.

§ 94. (*a*.) The grand work of construction of the means of setting forth the *creative law of God*, both as to the measures of the heavens and the earth ; of the ways of showing man's spiritual obedience to this *number* law of creation ; and of laying, through this law, the foundation for the power of prophetic utterance, was finished. Then came a grand explanatory determinative, showing that the scope of the knowledge of this creative law *was universal*. It was not confined to any one part of the earth *exclusively*, but belonged to all peoples and to all races. This knowledge was a commonality for the guidance of the world. Briefly, *the Great Book* discloses a secret in the eleventh chapter of Genesis. The first words are :

ויהי כל־הארץ שׂפה אחת ודברים אחדים

"And all the earth was of one lip, and of one form of making an orderly use of the *power* letters or numbers of the alphabet ;" where the basic word for *an orderly stringing together of words or syllables into one whole* (see Fuerst, under דבר), as might be expected, is the *Logos* word דבר, or *dābvar*, or 206 ; and where the power of enunciation is termed *lip*, to denote merely the instrumentality of the voice, as one mode of expression of the uses of 206, or of the דבר.

The inhabiters said, one to another, Let us build us a tower. What for? Architecturally to set forth the same problem, just finished. From the narrative one would suppose that they did build the tower, but not completely the city. Then it is said : "And the Lord said, The people *is* one, and they all have one *lip*. . . . Go to, let us go down, and there confound their lip, that they may not understand one another's lip." What is determined? Not

that their knowledge of the *dabvar*, or 206, or of the *creative law*, was to be confounded, but simply that their *means of expression by lip*, or voice, of this knowledge should be diversified into different forms of oral communication.   All had the like knowledge, but by confusion of *lip*, one part became Phenician, or Chaldee, or Egyptian, or Etruscan, or Pelasgic, and so on.   It is most likely that some one portion held to the original form, and the Phenician seems to have been that form.   But, notwithstanding this confusion of oral expression, the lesson is taught that the esoterisms displayed in the Hebrew Bible, were likewise the property of other races; and this abundantly displayed even in our day.   Of course, it is not a matter for discussion here, as to how greatly this esoteric knowledge might, or did become confused, or even perhaps, among some peoples, lost.

An Evidence of Common Possession.

(*b.*)   An evidence can be furnished of the commonality of this knowledge, in such form, also, as to guide toward unraveling the Bible glyphs. The thought of the ancient Jew may, perhaps, have been to spurn the devotee of Bacchus as an idolator; and perhaps, at that time, he was.   But see : Bacchus was saved out of the waters of the Nile, in an ark, by Io, or Ino, the daughter of Luna.   Such was the tradition.   Moses was saved out of the same waters by the daughter of Pharaoh.   The mystery begins to clear away, as also the distinction, when the numerical meaning of the name Pharaoh, פרעה, is known to be 355, or the value of that circular term of the Hebrews, *shanah,* שנה (equals 355), *the name of the lunar year* period.   The serpent, symbol of ever revolving time, swallowing one unit of its length of 355, becomes 354, the ancient, or Hebrew, or Egyptian, or Pharaoh lunar year.   The daughter of Pharaoh, then, *was the daughter of the lunar year*, or of Luna, equally with the savior of Bacchus.   The power of explanation is in that the pagan glyph is less obscured

than the Hebrew one, inasmuch as a lunar quality is plainly
given ; but once taken, the Hebrew is by far the most valu-
able, inasmuch as it gives the very value of the quality—
viz., $355 - 1 = 354$.   Faintly, the mission of Moses before
Pharaoh can now be disclosed.   Moses stands before the
pyramidal flame. His name, מֹשֶׁה, equals 345.   To what
the value refers is a mystery.   It may be taken as the
radius of the elements of circle three, § 82 (3.), as connected
with the pyramid interior works ; or as the numbers 3—4—5,
for the sides of a right-angled triangle ; or as 435, for 217
$\times$ 2 ; or it may be taken in connection with the problem of
Mr. Myers, given in his Quadrature, connected with $7^2 =$
$49 + 1 = 50$ (and as to which there is curious rabbinical
learning in Land Marks of Free Masonry, Vol. 2, p. 432,
note, London ed.)   The pyramidal flame may involve the
word *shaddi*, שׁדִּי, the god-name, as 318 (ד doubled by
dagesh), or 314, diameter to a circumference of *one*, and
circumference to a diameter of *one;* the *mean* being 316, a
great value connected with the foot of the descending
passage-way in the pyramid, or 381.   The Lord, or Jeho-
vah (a diameter value growing out of 113, and the perfect
one of a denomination of 20612), appears to him.   He says
he has selected him to go before Pharaoh, or 355, the cir-
cumference of 113.   As a proof, he tells him to throw the
rod (a diameter) he has in his hand (value 5) down upon
the ground ($113 \times 5 = 565 =$ הוה, or Eve, or woman half
of Jehovah).   It becomes a serpent.   He tells him to take
it by the tail (the value 5 for hand is also the letter ה, or the
womb, and taking the tail of the serpent in the hand is
equivalent to the process of making the year scale, as
$365 - 5 = 360 - 5 = 355$), and it is now the year value.
But having done so, it becomes again a rod, or diameter
value, or the lesson is taught.   Here are numbers, values,
and symbols of the calculations, in terms of the lunar year
values, for the serpent is one symbol for the calculation of
the lunar year in the terms of the values 113 : 355.   With
these, Moses is to go before Pharaoh, *who is* the lunar year,
as 355.

Egypt was darkness, or the womb, or mother, in oppo-
sition to Mount Zion, which was *male*. It was out of
Egypt that God deigned to " call his son." (Seyf. Chro.,
p. 191.) She was the woman of the garden, or rather the
garden itself, whose number was that of the 7th day, or 7,
and which was based on 113 : 355. The river Nile was
one of the passage-ways from the center of the garden, or
the place of the birth of time. Pharaoh, or 355, was
Egypt, because he was lord of Egypt; and Moses was the
calculator, or Hermes. Again, from these connections, it
now becomes plain why Solomon (the son of *Shebā*, or 7,
and who afterward entertained the queen of darkness, or
Shebā), together with his other buildings, erected a porch
(type of revolving time or aeon) for Pharaoh's daughter,
adjoining his *judgment* (Dan) hall. It is but a figure for
calculations of time, the hall of judgment being the place
of Hermes, or the Egyptian Thot, the god of knowledge,
and the calculator. It is possible that light is thrown by
the Moses glyph upon the shipwreck of St. Paul. Paul
shipwrecked, while kindling a fire, the rods or sticks being
in his hand, a serpent escaping from the flame (mystic),
or pyramidal sun measure, wraps itself around his *fore-
arm*. Here seems to be the recurrence of the type under
a change of form, after a fashion approximating the
t'phillin use, a note as to which is to be found in the con-
clusion to these appendices.

The Construction of the Tabernacle.

§ 95. The greatest expansion from the Garden of Eden
(on and in which it is rabbinically said that the whole law
rests, but that its containments are too subtle to be found),
architecturally, was the tabernacle, which Moses built just
after his serpent exhibitions before Pharaoh. In various
places, especially see Smith's Dictionary of the Bible,
where a most beautiful eye-pleasing structure is framed,
and the Bible *corrected* by an F.R.S., descriptions of the
tabernacle are to be found, as an apparently pleasing tent
structure to the eye; but a careful reading of its descrip-

tion in Exodus, with an attempt to put it together, will correct the ardent desire of most to have of it a stylish oriental structure.   They will soon see, who try this, that the setting forth and combining of measures was the object of the mention and detail of its various parts.   The grand object of this tabernacle was that it should be a residence of Jehovah.   Now, the work was made up by the offerings of the people.   There were just 603550 people enumerated as offering a *bekah* apiece.   There were *two bekahs* to the *shekel;* therefore, .there were offered—

$$603550 \div 2 = 301775 \; shekels.$$

But there were 3000 *shekels* to the talent.   So there were just—

In talents,	100.00
With remainder over, of, *in shekels*,	1775.00

It may be stated in another way.   There being 603550 *bekahs*, there being 6000 *bekahs to the talent*, then there are 100 *talents*, with a remainder over of 3550 *bekahs* (where the use of 113 : 355 crops out as 1130 : 3550, where 1130 is circumference to a diameter of 360).   3550 *shekels* $\div$ 2 = 1775 shekels, as above.

This *was* the actual division made ; for, of the 100 *talents* were made the *sockets* of the pillars, and of the remaining 1775 *shekels* were made the *hooks of the pillars*. These last words, *the hooks of the pillars*,

<div align="center">ווי העמורים</div>

are said to be of very great kabbalistic value ; so much so (it is said) that, in the scrolls of the law, the commencement of a section is, where possible, made by the letter *vau, the page itself being considered as the omudim;* because, it is said of them, that they carry the key power of the tabernacle construction.   By the same authority, it is said that the word עמודים, *omudim*, can be taken as meaning *cubits;* hence a meaning of *mother* and *fore-arm*.   In one way, apart from this departure, the difficulty is not very great, with the helps we have of construction.   The house was to be the place of residence of Jehovah, and Jehovah is but a play on the value 113, or diameter to a circumference of 355, or Pha-

raoh; while it is also the value of the straight line *one*, of a denomination of 20612. We have the form—

$$(1.) \quad 113 : 355 :: 56.5 : 177.5$$
and
$$(2.) \quad 56.5 \times 10 = \text{יהוה} : 177.5 \times 10 = 1775 :: 360 : 1130+.$$

In the 3550 *bckahs*, whence the 1775 skekels, we have circumference to 1130+; *which last* is circumference to 360, the standard year or Jehovah year value, as a perfect circular element. Here, in (2.), we have the form of the 1775, or *hooks of the pillars* of the *house of Jehovah*, directly connected with Jehovah, in the form $56.5 \times 10 =$ יהוה, *where Jehovah is shown to be the diameter to this very* 1775 *as a circumference:* so, in fact, the Jehovah value is being raised, *in pari passu*, with the 1775 shekel value of the *hooks of the pillars*. In heathen mythology, the hooks of the pillars may have indicated the hooks binding together the opening of the *sistrum*, sacred to Isis, or the woman; and this, as the *Garden of Eden*, was the womb of time, virgin, because it was productive of itself. The origin of measures, however, was also a Jehovah expression, as 10, or picture of a circle, with its diameter straight line, the perfect or straight line *one*, hermaphrodite, and of the perfect circular value 20612, the *source* and *begetter* of all things, the infinitely small, but of the same realizable *proportional* value as 1—20612, invisible, intangible, yet resident at the meeting of the male and female cubes, over the ark, and between the cherubims. As the 7th day was the *kodeshed* day, the pure virgin day or circle, so also, when the tabernacle was completed, as a badge of all its containment, the high priest wore on his forehead a plate of pure gold, bearing the inscription

<div dir="rtl">קרש־ל־יהוה</div>

where the same feminine trait as of the 7th day is predicated of the great word. *Kodesh l' Jehovah* was *holiness to the Lord*. By the various hieroglyphic powers of this combination, the various purposes of the tabernacle, for *measure*, *sacrifice*, and *worship*, are to be found indicated.

(*a.*) There is one fact in regard to Moses and his works

too important to be omitted. When he is instructed by the Lord as to his mission, the *power* name assumed by the Deity is, *I am that I am*, the Hebrew words being

אהיה־אשר־אהיה ;

a various reading of יהוה. Now, Moses is משה, and equals

345.

Add the values of the *new form* of the name Jehovah, $21 + 501 + 21 = 543$, or by the reverse reading 345 ; thus showing Moses to be a form of Jehovah in this combination. $21 \div 2 = 105$, or, reversed, 501, so that the *asher* or the *that* in Iam-that-Iam is simply a guide to a use of 21 or 7×3. $\overline{501^2} = 251+$, a very valuable pyramid number, indicating the distance from the intersection of the passage-ways to the central axial line of the structure. The analysis of this form really conducts one back, by reference, to the Garden of Eden form, on which the pyramid resulted. Very frequently, however, the simplest form of symbol use is the most important. Bend 345 into a circle, and we can read 354, which is the result of *Enosh*, as אנוש, or $365 - 1 = 364$, which has for the other extreme $355 - 1 = 354$, where 364 comes from the *kodeshed* use of the 7th day, as $7 \times 4 = 28$, and $\overline{28 \times 13}$, or $52 \times 7, = 364$; thus showing *Kodesh L'Jehovah* truly enough ! And, again, it can be read 435, and $435 \div 2 = 217+$, or the *heel* use.

APPENDIX VII.

The Fourth Chapter of Genesis.

§ 96.   The attempt at guiding one's way through one set
or kind of hieroglyphic readings spurs out, here and there,
hints which may be used as helps to other kinds of con-
struction.   Rabbinically and kabbalistically, it is averred
that the entire Biblical knowledge is held in the first four
chapters of Genesis; but it is also taught that the subtlety
of teaching, or its comprehensiveness, is such as to prevent
recognition in many ways and details.   One great *cloak* to
blind as to determined readings of the narrative style is in
the making use of the hermaphrodite condition; for in-
stance, a personification combining the idea of male and
female may be treated of as a *feminine quality*, through
determinative construction, while at the same time it may
be characterized by superficial description in its other quality
as *male*.   Thus the name *Jacob*, יעקב, or *Jah* is *heel*, is
hermaphrodite, where, as regards the whole concreted
name, Jah (or Jehovah) is masculine, while *heel* is the fem-
inine part.   Jacob evinces this by seizing with his hand
(י = 1 + 4 = 5) the heel of his brother.   The word ד, or
hand, has a sexual meaning masculine, while the heel is
feminine, and yet as a pictured hieroglyph, and as 5, it is
the womb, a creative number.   Thus a double combination
of Jacob's hand, male, with Esau's *heel*, female; or of Esau,
male, with Jacob, in his feminine quality of *heel*, as female,
which betokened the changes of relationship which they
should take to each other on the celestial circle.   So also
with relation to the glyphs of Sodom.   Nork shows, clearly
enough, that the *controlling* characteristics of the Sodom
description are feminine.   Its geographical location was at
the *salt* lake, and Venus sprang from the salt foam.   It was
the *asphaltum* or *bitumen* lake,—to that extent a Typhonic

emblem of *darkness*, or the pit,—also feminine. It was at *evening*, when the angels went over from Abram, the *sun measure* (who, as typifying this measure, was at *midday* seated in the door of a pyramidal structure, under the vertical rays), to his brother, or *counterpart* (or sister), Lot, seated in *the gate of a fortress*—all feminine traits. The recondite meaning connected with the place was as of the *abyss*, ecclesiastically paralleled to *woman's desire;* and thus " *those* " (men?) of Sodom who attempted to seize the male guests of the patriarch's brother, though his daughters were offered a *sacr*-fice, are clearly enough determinative of the real natural fact that they (" *those* ") were women. Further determinations are made. It is Lot's wife that turns back with longing desire, and is converted into a *pillar* of *salt*, a monument of combination ; while it is Lot's daughters to whom the impulse of repeopling the world is given. The tracing of the subtle substitutive involutions of these qualities becomes the necessity for the reading of the more important teachings of the esoterism. It is under just such a cloak that the feminine character of *Hebel*, or *Abel*, is concealed in 4th Genesis.

It has been seen that the Garden rested on the Adam or 144 form, as 4 squares of $\overline{6 \times 6} = 36$ each, around a central point ; then the crossed lines are extended out, so that the area 36 is expressed in line measure of that number ; which 36 is diameter to 113 o+ ; which brings up the 113 : 355, from whence *the woman* and the *Parker numbers*, constructive of the pyramid. Now, subdivide these lines of 36 by 4, or $36 \times 4 = 144$ each, and in number we have 4 of them. The operation is indicated by 4^2, or $36 \times 16 = 576$, as 144×4, and the letters of Cain's name, קין, added as to their full values, gives the character value of 16, as $100 + 10 + 50 = 16$—o. The Garden has now become, under this use, one of a square of 144 in the center, or Adam, expanded into four such squares, or, together, a large square of $144 \times 2 = 288$ to the side ; or, *cubed*, the Adam or hermaphrodite cube, as a primal one, is, in separating into male and female, each a perfect one, enlarged

by 8 other cubes into another perfect one, where, however, it is composed of the separated unities. The circumference of this large square is 144 × 2 = 288 to the side, and 288 × 4 = 1152 for circumference, and as indicating this we have the first values 115, by reading the letter values of Cain's name, as they run, in קין, or 115. The measure of a horizontal line passing through this garden, then, will be noted from verge to center, as 144—441 ; *counterparted*, so as to exhibit separated qualities, just as it was in the expression of woman-man, as 311—113 ; and this is the meaning, or source of meaning, of the kabbalistic use of *reverse readings*. It was always the *double cube*—i. e., male-female, i. e., white-black ; and it explains the reading given of 1656—6561, or 6561—1656, already had. But a most interesting feature now presents itself in this subdivided value of this garden. 144 is $\overline{12 \times 12}$, and the side of the great square of 144—441 is $\overline{12 + 12}$, or 24 in length, where 144 is taken as, say, inches, and reduced to *feet*. 24 is *four sixes*, or $\overline{6 \times 4} = 24$. Now, this is *exactly* the measure of the base of the great pyramid in this identical *scale* of measure ; for 190.985+ *feet*, which is diameter to a circumference of 600 feet, is numerically just $\frac{1}{4}$ of the side of the base of that structure, and 600 × 4 = 2400 *feet*, as the circumference to the base side *in feet*, taken as a diameter value.

(Perhaps a simpler way of explaining the likeness is this : The pyramid base side is diameter to a circumference of 2400 *feet*, which can be used as its equivalent ; and 24 *feet* is the characteristic of this base side. 24 *feet* is 288 *inches*, or 144 × 2. 144 is Adam, the nucleus of the garden, and may be taken as the square of 12, *for area*, or as 144 for *the side of a square*. Place this in the center of four squares of like size, and the side of the larger square, so framed, will be 288, or the characteristic of the base side of the pyramid *in inches*. 288 × 4 = 1152, the total circumference. Besides this, this 1152, as designative of this circumference, is symbolized by the letters INRI, standing for *earth*, *air*, *fire*, and *water*, the elements composing the cosmos which the pyramid measures. Bend these letters *into a circle*, and their

number values read 1152. This is referred to in the last part of this Appendix.)

Here the characteristic value is taken in 24 feet. Again, referring to the garden form of the crossed lines being 36—63, these indicate 113—311, for 113.0+ is circumference to 36 as a diameter ; and 113 × 5, if this be so subdivided, equals 565, or הוה, or Eva, or *hovah*. But to indicate the cube of 8, enlarged from the cube of one, the letters ה and ה are, together, an oblong of two squares (p. 160), or the *Phenician fence*, giving these two letters—viz., divided— and one part of this oblong is ה, and the other ה ; but ה is the womb letter, or 5, as showing the half of the *primal one*, and taken as the single *cube*, it requires just 8 others for the enlarged cube, and the letter ה, the other part of the oblong, *is* 8. Therefore, הוה, or primal Eve, and חוה, or Eve separated to be the *producing mother*, are simply de- terminative of this, as the one is ה (or 5), Eve, and the other ה (or 8), Eve. This enlargement is based on the idea that for every perfect woman there must be a perfect man ; hence the combination is a black cube and a white cube, the practical value being in the *meeting* of the cubes or *covenant :* so that while (H)-ouva, or (ה)וה, is woman, (Ch)-ouva, or (ח)וה, is woman having a husband. But this doubled form is an oblong, and, to make it a perfect square, four must be taken, or 8 such alternating cubes, to make another perfect cube. The commingling of Adam with Eve produced the *welding* together of the two Garden forms in *Cain*, or *Jehovah*, who was the *divider*, or *meas- urer*, or *distributor*. Cain was Vulcain, and Vulcain, with the Egyptians, was the greatest of the gods, or of the Cabirim. Vulcain was Pater-Sadic, the Right One, or the Just One ; and by Fuerst : " Sanconiathon calls one of the constellations *Mizor*, מזר, a brother of Sadic, צדיק (same with Melchi-Sadic, the Just One)—i. e., Jupiter ;" which simply shows that *Mitsar*, or *Mitzar*, מצר, *Egypt*, was the same with *Mizar*, מזר, and was both *wife* and *sister* of *Jupiter*, who was the *Melchizadik* of the Hebrews. Seyffarth, Part 2, p. 74, gives *Cabirim* as *Gibborim*, "the

mighty men of renown in those days," in 6th Genesis.
And Fuerst says of the *Cabirim* (planets) : ''A name of
the 7 sons of צרדיק," or Pater Sadic, or Cain, or Jupiter.
As the expression "*Adam* (144) *knew Eve* (56-5 or
56-8), is but the commingling of the Garden of Eden ele-
ments, and as the Cain form is but another use of the same
elements, it is most interesting to read the teaching of
Irenaeus (xxxiv) (Adam and Cain being one), that " the
father and the son lie with *the woman*, whom they call
Mother of all that live (Eva)." (Sod., p. 74.) How true
it is here, for it is the intermingling of the squared forms
of *earth measure* (Adam-Cain) with the circular measures
taking their rise from *the woman* (האשה, 5315) ; whence
Eve, as shown.

Before proceeding to the reading of 4th Genesis, a
governing determinative should be taken into considera-
tion. Cain has, in one respect, the same quality with
Adam—viz., he is " *a divider of the Adam-h*," or tiller of
the soil," and as with Adam, it may go to show the use of
measures in right lines, though connected with circular
values. This seems to be determined by the fact that
Cain is said to be Jehovah; and the other fact that in all
the conversations in this glyph, the god-name Elohim (or
31415), circumference value is dropped, and *Jehovah*,
יהוה (or 113 × ·5 = 56.5 × ¹⁰ (= יהוה') = 565, *Eva*), a di-
ameter value is alone used. Such being the main idea
(whatever the uses under it, which no doubt involve time
and earth measures), when this special phase of the problem
is worked out, and perfectly ended in the Cain glyph, as a
variation on the general workings of the main problem, the
subject is resumed under the other form ; for, as determina-
tive of this, the יהוה' form is dropped, and that of circum-
ference is again taken up in the expression " for *God* hath
appointed me another seed instead of Abel," where, for the
first and only time in these connections, the term Elohim
(31415), *God*, is used. The seed was שת, *Seth, the year*,
ts values being 3 × 4 = 12, and, as an origin, 3 + 4 = 7·

(*a.*) (1.) The first sentence in 4 Gen. 1, is : "And Adam

knew Eve, his wife ; and she conceived and bare Cain, and
said, I have gotten a man from the Lord," agreeably to the
accepted translation, which is manifestly a false rendering.
A better and more literal rendering is : "And Adam knew
Eve his wife ; and she conceived and bare Cain, and said,
I have *measured* a *man*, even *Jehovah*." The reading is
ka'nithi aish eth Jehovah, or

<div dir="rtl">קניתי איש את יהוה:</div>

Here the proper name is taken as *a measure*. Wordsworth,
in a note on 4 Gen. 1, on this passage, says :

" Cain—*I have gotten*],—*Kain*, from *Ka'nithi*, *I have gotten*.
Here is an instance of the principle on which names were given
in primitive times—namely, a desire to indicate some leading
characteristic of the person, or thing, to which they were given.
See (Genesis) ch. iii., v. 20. Kain intimates *acquisition*, and
Eve's next son was called by her Abel—i. e., *vanity, weakness*."

This principle, as laid down by Dr. Wordsworth, is found
everywhere to be a right one. Here, while the name may
stand for a great variety of uses (a phenomenon of the
hieroglyphic), one fundamental recognition is of *the fact*
denoted by the act of Eve—viz., *I have measured*, is fol-
lowed by the substantive form, *a measure*, or *Cain*, or *Je-
hovah*. The word of the text is derived by Wordsworth
from *ka'nithi*, *I have gotten*. The derivation is good, for
the verbal is *kānāh*, קנה. We find this as קנה, *a substan-
tive*, meaning *measuring stick*, or *rod*, the *beam of a bal-
ance*, from the verbal קנה of Wordsworth, which is "iden-
tical in its organic root with כנה, or *Cānāh*, to *divide,
separate*." (Fuerst.) So, also, Sir William Drummond
takes the same derivation—viz., as *a measure*. (Œdipus
Judaicus, p. 196, on chap. 15, v. 22, and chap. 17, v. 9,
of the Book of Joshua.) The derivations run off into other
significations ; as, for instance, כנה, *Cānāh*, *to divide, sep-
arate*, is same as חנה, *chānāh*, both meaning *to pierce*, as
"חנה, *chānāh*, (1.) to incline, to bend ; (2.) to *pierce of a
weapon*, organic root of which חנ־ה, *chn-h*, also lies in ק,
Kn (קון, *Kūn*), belonging to קין, *Kayin*, *Cain* (proper
name)." (Fuerst.) As exceedingly pertinent to this sub-

ject, after חָנָה, *chānāh*, and next in order of words comes
the word " חֲנוֹךְ, *chanoch*, noun proper, (1.) of the son of
Cain (meaning *Instructor*, *Initiator*), by LXX, ἐνώχ, (2.)
of the son of Methuselah, who founded the 365 year."
(Fuerst.)   It is so pertinent, because of showing Cain to
be *the measure*, in *Chanoch* his son, the *instructor*, or *ini-
tiator*, of the astronomical circle and the solar year.   And
also, likewise, "The god of *time* was worshiped under the
names of חִיּוּן, *chiun*, by the Egyptians ; clearly taken from
כִּיּוּן, *ciun*" (Fuerst, under כִּיּוּן, *ciun*, a name of Saturn, or
Seth) ; and כִּיּוּן, *ciun*, is same with קַיִן, *Cain*.   The *pillar*
was a mark of the year, and Nork says of Cain that he
was as the German *pfeil*, *pfeiler*, *spear*, or *pillar*, or the
god with the *hasta* or *spear* point.   Thus one has the word
Cain as a *dividing*, *splitting*, or *piercing measure of time;*
and, besides, he was the earth measurer.   Now, Vulcain
was the Pater Sadic, or Melchizadik, and as a form of
Mars, with the Egyptians, he held the *ecliptic*, *Libra*, or
the balance, and also was the *piercer*, with the sign of
Mars, or the *hasta*, or spear.   Tubal-Cain, son of Cain,
has been taken by commentators as Vulcain, but there was
no need of going so far for the sameness.   The very name
Vulcain appears in the reading, for in the first words of 4
Gen. 5, is to be found V'elcain, or V'ulcain, agreeably to
the deepened *u* sound of the letter *vau*.   Out of its imme-
diate context, it may be read as, "*and the god Cain*," or
Vulcain.   If, however, anything is wanting to confirm the
Cain-Vulcain idea, Fuerst says : "קַיִן, *Cain*, *the iron
point of a lance*, *a smith* (blacksmith), inventor of sharp
iron tools and smith work."   Cain, as a number value, is,
as the letters run, 115 ; adding the full values 160, or
character value of 16, or adding the character values (as
1 + 1 + 5) is 7.   He is at the head of a system of calcula-
tion, as Seth is ; Seth, שֵׁת, being 3—4, as the letters run,
adding the character values, is 7, or multiplying them,
$3 \times 4 = 12$.   But Seth seems to be the more perfect value,
for it is composed of the productive numbers 3 and 4.
Mars and Vulcain, or Cain, or Pater Sadic, are forms of

each other. Under the Egyptian forms of the celestial system, by one or other form, Mars held the *solstice* and *equinox* points. But Mars was the *generator*, while Vulcain was the *divider* or *measurer*.

(2.) Cain, as son of Adam, 144, *was* Adam; and, as son of *the woman*, he was 113, *man;* and $113 \times .5 =$ 56.5 $\times$ ¹⁰ (= יהוה) $= 565 =$ הוה $=$ Eva; where, in 56.5 $\times$ ¹⁰, *Jehovah* springs from 113, or *man:* so, thus Cain, the *measure*, was *man*, as 113, and Jehovah as 565¹. And so, also, Cain thus welding together the *Adam* and *woman* forms of the garden, thus becomes really a determinative of what has preceded in the narrative. He was 144, and its feminine, or circular derivatives; and this is determined, for it is said "Cain was a divider (by measure) of the earth." The words are עבד ארמ־ה, *obed Adam-h.* The verbal *obed*, is *to divide, to separate,* to mark by long stripes or furrows; and these are the more radical meanings, the secondary derivation being to *till*, to *cultivate.* It is thus expressly said that Cain is a *divider* of the *Adam-h*, or of the 144-5, or 720. Taken literally, and always in division keeping the *counterpart* form, the divisions of the square would be $720 \div 2 = 360$—063; 360 $\div 2 = 180$—081; $180 \div 2 = 90$—09; where the division has come to its lowest integral terms in the square of 3. But, virtually, it is seen that this is but the Garden form. It is very curious that the *counterpart* values present strange co-ordinations with the general subject-matter; for, $63 = 9 \times 7$, and 7 is characteristic of $\mathcal{Y}$, and 9 is of $\mathfrak{y}$, or together $\mathfrak{y}\mathcal{Y}$, *ots, the tree of the Garden;* 81 is the side of the area square of 6561, the Parker base; while 9, the last sub-division, with the 16 of Cain's name, gives $9 \times 16 = 144$, or a curious restoration of the Adam form of 144 in its sub-division of the cube of 3, and the square of 4; and $16 \div 9 = 1777.77+$, the cubit value of the base of the pyramid. Cain's function seems to be marked as of the quadrant division lines of the square, or of the cube, or he seems to represent the cross division lines. It has been shown that for calendar purposes, Cain, as 115, was the complement

to make up the standard year of 360 days, or the celestial circle of 360 degrees, as $28 + 217 + 115 = 360$: and that on this, as a standard, the addition of the 5 epagomenai days made up the full solar year of 365 days.   Thus, Cain can be taken as this value of 360 degrees, of which he holds the crossed lines as *exactly balanced*, because he was *the Just One*.   This was the standard celestial circle, of which the horizontal diameter was the *ecliptic*, to which plane all movements of the heavenly bodies were referred. The divisions of the Zodiac (ring of life) were laid off on this circle in 12 compartments.   The compartment of Saggitarius bounded on the *winter solstice*, and was called *Tobi* as a month; then followed the Goat, Waterman, Pisces, Aries, Taurus, and Gemini, six divisions closing up to the *summer solstice* in Gemini, which was called *Pani*. But by this distribution Scorpio falls to the *second* sign below the autumnal equinox.   The actual distribution of the full solar year months, on these signs, did not accord with them ; but June being Cancer, as a month, to accord with the signs, fell back on to the sign Gemini, of the standard circle or zodiac, 22 degrees, or days, so that June 22, for the month, accorded with the boundary line of *Pani*.   By this arrangement, which was the correct one, Scorpio would also fall back, as a month, to within ten degrees or days of the boundary line of the autumnal equinox (September 22 to end of month inclusive 9 days $+$ the 1st day of October) ; which ten degrees, or ten days, was the amount to be added to the 355 year, or Abram-Isaac year, to make up the full complement of 365 days.   Putting these ten days *in a box*, carried the last day of the 355-day year over this gap of ten degrees, which, as blotted out, carried or continued the equinoctial to the first day of Scorpio, not as next to, but as the actual first day of October.   And, indeed, this was the adjustment as made by the Hebrews ; for 355 was their basic year value, and by their *squared form*, they followed the order of the actual months, so that the *third quadrant* of the year run : Leo, Virgo as the corner square, and then Libra.   By this arrangement, this or the holy

square, or cube, was embraced, between Cancer and Scorpio, depicted as so much alike as to represent the cherubim, measuring the holy cube in the holy of holies. It was the function of Cain, to adjust these unequal qualities, the one to the other: 1. A standard year base; 2. A standard zodiacal circle; 3. The arrangement of the actual year of 365 days for distribution on this circle. But it is seen that under the squared form Scorpio could be treated of as Libra on the standard circle, so that the same phraseology would apply to each. By this month arrangement, also, the same figures would apply to the same seasons perpetually; while, by the fixed value of the signs of the Zodiac, they would fall away from fixed locations of the year by the lapse of time, as they have done.

Thus, under this explanation, one of these cross lines leads from Scorpio, and this was the place of piercing the dying sun, or rather of *impregnating the depths with the new sun*. Here, at the autumnal cross, as referred to the center of the square, was the piercing of Abel accomplished; but unfortunately for what is called orthodoxy, the bloodshed was *chāthan dāmi*, חתן דמי, or the *bloods of the bride chamber*. How exceedingly wonderful the connecting links of this esoterism are! Jesus was the *son of man*, the *Ben Enosh*, or *Enosh*, or $365 - 1 = 364$, the son of *the year*, or *Seth*, שת; but the patriarch Judah, son of Jacob, the Leo or lion of the Zodiac, and renewer of this Garden of Eden glyph, in *his phase* of working, found Tamar on the same crossed lines, at the same place (the solstice line crosses the equinoctial *at the center;* the crossing being in common, Judah looked *down* to his opposite for Tamar, and met her in the center, just as Scorpio met Taurus at the same place), but at harvest, along the solstice line between *Leo* and the *goat*, and she was the ancestress of Jesus through Pharez. Now, while Enosh is the year, Tamar was the palm-tree, a recognized symbol of the sun and of the year, in its *hollowness*, or *nothingness*, showing another phase of this astronomical picture; so that, both by *numbers* and by *types*, and also by *derivation*, Jes-us

was the sun, as well as a man ; and as such, Jesus and Abel
were one.   The glyphs, as the saying is, run on all fours
together.   Cain, a Mars form, pierces Abel, and the Roman
soldier, a son of Mars, pierces Jesus.   Both, by Kabbal-
ism, are pierced at the meeting of the cubes, or *covenant*,
or at the intersection of the crossed lines.   Abel is said by
some to be the same with *Abelion*, the sun.   In the " Ros-
icrucians," by Hargrave Jennings, is a representation of the
astrological-theological cross.   The man Jesus is depicted
as half male, half female ; the female, or sinister, or dark,
or evil side, *being blackened*.   On this cross He is pierced
in the *sinister* side, in the venter, which by the chart is
Virgo (but should be Virgo, Scorpio), the place of piercing
being in the side of the man, or in the approach to the door
of Indranee, and just where *the woman* was taken from
the man's side in the Garden.   But man, as 311, *is the
woman*, or the two are interchangeable under the coun-·
terpart form 311—113, so that the piercing is the type of
the consummation of marriage, *duplicated in that of the
rite of circumcision.*

So Cain is Melchizadik, or Pater Sadic, or Jupiter ; the
Just One, or the Right One, or the Adjuster.   He is the
ecliptic, and the balance line for equinox, and solstice.   He
is the divided cube, representing, as to one of its phases,
the heavenly measures.   It is not a single cube, but is made
up of 8 cubes of 144, each, in its subdivided form, com-
bining distinct males and females, for production.

(3.)   The narrative proceeds, "And she again bare his
brother Abel ;" where the word *brother* is simply an ob-
scuration of the sex of Abel (he being hermaphrodite),
which in reality predominates in this glyph *as female*.   It
is observable, too, that no mention is made in this case of
knowledge by Adam.   It is so in the first verse, and it is so
in the close, as relates to Seth, but here there is omis-
sion.   Abel is הֶבֶל, *Hebel*, and, adding the character
values (3 + 2 + 5) equals 10, or the perfect *one*, or *Jeho-
vah*, showing that Abel and Cain are but phases of the
same form—viz., of Jehovah.   As this is so, while הֶבֶל,

Hebel, has its significant use as a single word, it is suscep-
tible to division into הֵ־בֵל, or *H-Bl*, or *The-Bel*, or *the
sun*. In this form the values run 32-5, and 32 × 5 =160 =
Cain ; thus showing the collateral sameness. As a num-
ber value 10 is the perfect cube (so was Cain) ; it is also
circumference to 31.8 as a diameter, and this was the Gnos-
tic Christ, who was Jehovah. But the double form of Je-
hovah, as male-female, is here eliminated, because by the
determinatives *Hebel* is made to assume the *feminine side*
of his own form exclusively. The meaning of the word
Hebel is *emptiness, nothingness*. This is the idea of the
primal God. In Kabbala, *the first cause*, God, is named
אִין, *oin, nothing*. (Franck, 115, quoted from Sod. p. 67.)
Nothingness is used as a mark *of the female*. Nork says
that the beautiful Naamah was an astronomical name for
Venus ; as she was, also, he says, the *Bohu*, or word for
void in 1 Gen. v. 2. Take other words of like and kin-
dred and correlative meanings : עַיִן, *ayin* — " 8 . . .
from עוּן, *ūn* (= אוּן, *ūn*), same as אוֹן, *aven, nothingness,
vanity* (= הֶבֵל, *Abel*), *sin, lie*, . . . but see עוּן, *ōn*."
(Fuerst.) Under עוּן, *ōn*, but in form עָוֹן, *avon*, is found
the idea of *emptiness*, with *sin* and *cohabitation* all com-
bined. This is determinative of the *character* of the circle
as a personage : (1.) That it is but the circle part of the 10,
the straight line, or diameter value, being left out—i. e., it
is an *empty* circle ; (2.) That, sexually, Abel is feminine,
for the purpose of this glyph. This is again determined
with a new significance in the description, "And Abel was
a keeper of sheep," or follower of cattle. The words
keeper of sheep, are רֹעֵה צֹאן, *roch tson*. This word
roch, keeper, is a compound of רַע, *ra, evil, bad, wicked,
malignant*—in short, the early church characteristics of
woman; and with appended ה, *h*, is not only a shepherd,
but a shepherdess. But take the word as a numerical de-
terminative, רַע = 27, ה = 5, and 27 × 5 = 135, or אִשָּׁה,
or *woman*. Again under אוֹן, *avon*, same as עוּן, *un* (vari
ously pointed), not only are the same meanings expressed,
but, also, it is used as *On*, or *Heliopolis*, the *city of the*

Sun, which is the *hollow circle* of the year. But, indeed, חבל , *chebel*, signifies, *to conceive*, also *pains of birth*.

And thus a feature of the glyph is of the Garden of Eden : (1.) In its *masculine*, or right line, form of Cain-Adam, and (2.) in its *feminine*, or sun circle, form of Abel ; and its object is, in some sort, to show forth astronomical applications of the measuring elements of one to the other. But as Cain, as The Right One, holds the balances, or beams of the balances, and there are two balances—viz., that of the equinoxes and that of the solstices—he as *divider*, or center crossed lines, of the Adam-h, cuts this circle in its quadrants. It has been shown that the balance opposes *birth* and *death* in the Mars form. The chief points were in Aries and Scorpio.

Now, there is a curious reflection. In Hebrew, the balances are מ־אזנים, *m-oznim*, while the *ears of the head* are אזנים, *oznim*, the precise same word, save the *mem*, מ, prefixed. The type is clear enough, for the division of the head at the ears exhibits this very glyph of the Mars form of birth and death, as balanced in the equinoctial scales. To join the two symbols, as significant the one of the other, in the Hindu form, over the *mouth of the vagina* is drawn the *scull and crossed bones*, forming a kind of mon-

ogram for *life*. In church emblems, one finds ☧

or crossed bones with this letter character, which is the letter ק, *kopf*, or symbol of the half of the head *back of the ears*.

(4.) By considering the place of Scorpio, or D'lilah, in its evil aspect, as connected with its feminine quality, then it would come under the adjective form of *evil*, or רע, *ra;* and the opposite to this would be *good*, or חוב, *tobi*, as designative of the two opposite qualities. Now, by the ancient Egyptian charts, the zodiac sign of Saggitarius, bordering on the *winter solstice*, carried the name *Tobi*, or the Hebrew טוב, *good;* while the opposite sign of Gemini, bordering on the *summer solstice*, carried the name *Pani*,

or Hebrew *Pani*, פני, *face* or *aspect*. The astronomical course of going from *Tobi*, by way of the vernal equinox, which, as opposed to Scorpio, was *good*, to the summit, or *Pani*, would be upward to the highest point, where the *aspect* or face of the year would change to its reverse declining. From *Pani*, the course of the seasons would be declining, by way of Scorpio, or *evil*, toward the winter solstice. Now, taking what is said to be so as to the offerings, Cain *being Jehovah* in this glyph, as a diameter value, or as diameter values, has nothing to do *with himself*, but does in his masculine capacity *shine* (for the word is *shine*) favorably upon the circle of the year, or zodiac, or *life;* or upon Eve, Venus-Naamah. At the summer solstice point is the intersection of the diameter line with the curve, at the highest reach of the sun. The sun here is *vertical*, just as at the noon point, and the standing still of the sun at the noon point was called דמי, *dāmi*, by the Vulgate, and LXX, (Fuerst), and *dāmi*, דמי, is exactly the same word for the *bloods* of Abel, which Cain shed. Here was the fiercest power of the sun looking down vertically along the solstice line to the intersection of the cross lines. At the same time, his *aspects change* or fall to his declining. This is actually described. It says: "And it burned upon Cain, and his aspect, פני, *Pani*, changed to descending." Now follows a description of where the sun is going to in descending, by a history of his travel. The words are: " If thou doest well (good, *Tobi*, טוב), there is *exaltation, rising*"—i. e., you will rise by way of the good side ; "but if thou doest not well (when you are descending), Sin (feminine חטאת, *chattūth*) is a Lier-in-wait at the door or opening (or Sin is at *the quadrant line*, at the opening ; for רבץ, *rbts*, *the lier in wait*, is also *the 4th side*, as of a cube, or square, as well as a *couch to lie on*.) Again : " Sin lieth as a *copulatrix*, at the door or opening ; for רבץ, *rbts*, is same with רבע, *rba*, and is not only to *lie down, to couch*, but also *to copulate*. The word for *opening* is in the same kind of connection, for פתחון, *piththachon*, the opening of the mouth, and also פתחיה, *p'thach vah*,

or " Jah is causer to bear, where El, or Jah, is conceived
of as the creative world-power." (Fuerst.) In other words,
" At Scorpio you will find Naamah, as beautiful as wicked,
who is, in this instance, the feminine part of your brother
Abel." And now comes a great determinative, fastening
this interpretation, *as of marriage*, or the *consummation*
of marriage. In the 16th verse of the 3d chapter, as to the
woman, it says : "And thy desire shall be to thy husband,
and he shall rule over thee," which was the accompaniment
of *sin*, or *transgression*, or *crossing*, as a quality deter-
mined upon to be the characteristic of woman for all time.
Here (obscured under the male-female form) it is said as to
Hebel, as *Sin*, to the *man* Cain or Jehovah, "And her
(his) desire shall be unto thee, and thou shalt rule over her
(him)." This seems to mark out an unmistakable character
of the glyph. But it is followed by the fact, for it was that
they, being in the dividing of the field (ב־שׂרה, *B-sadeh*),
Cain, the rod, rose up and *violated* his brother. It was
marriage, and the bloods that were shed were the חתן דמי,
chathan   dāmi, or *bloods of the bride chamber;* and
they were to be found as part of the h-adam-h, or 3600—
0063. The Cain form of the garden was 144—441, and
the *bloods* shed are 441, or דמי, or by counterpart 441—144,
which simply shows that these *bloods* were, after all, but a
means of division of the garden for astronomical and other
purposes ; and as the *sun standing still* is vertical, as coin-
ciding with the one Cain division line, is by name דמי,
dāmi, or 441, so *the bloods* of Abel, shed on the other, and
horizontal division line, are also דמי, or 441. Considering
the 144—441 or 441—144 form of the Garden, and the
exact fittingness of these applications, as 441 and 441, for
dāmi, thus twice used, respectively, for solstice and equinox
line, with the narrative form of explanation, and the inter-
pretation of the glyph for this phase seems good.

(5.) But the Cain form of the Garden, 144—441, has
been shown to be in the reduced form, exactly significant
of the base of the great pyramid—i. e., 144 inches is 12, say,
feet, and $12 = 6 + 6$; therefore, there being $\overline{144 \times 2}$ to the

side of the Garden, this is, in this reduced form, four 6s, or
6 × 4 = 24 ; and indeed the actual measure of the side of
base of the pyramid *is* diameter to a circumference of 24.
Now, since from the very first line of Genesis, through the
Garden of Eden scene, there has been a continuous and
systematic reproduction of the pyramid elements of con-
struction, in another mode of working them, with also the
very foundation principles and numbers on which it was
constructed, to be found both in the Garden and in the flood
glyph, it might well be expected that this 4th chapter, like-
wise, would be really founded on the same method as the
exactly correct one laying at the base of all other phases
to be presented. And, indeed, the connecting link between
the general construction of the exterior and of the interior
work does seem to exhibit itself as obscurely hidden away.
Cain and Abel are together in the *dividing of the field.*
The word is *sādch,* שדה, *field,* and rather means a dividing
as of a field.   With this word is the prepositional prefix ב,
or B ; or the whole is ב—שדה, *B—sādch,* and for value
we find the character values as they run, 345-2, which
may designate the counterpart use of 345—543.   Now con-
sider, however, that we have the exact terms of the pyramid
base in the Cain Garden form, as shown, and then that we
have the Hebel circle in connection with it.   Then here
there are the two elements necessary for *putting the pyra-
mid in a sphere.*   Now, refer to the geometrical problem
for the construction of the interior works, § 74.   One por-
tion of this problem—viz., that having reference to the
great salient characteristics of the interior works—is founded
on " *circular elements three,*" as given in § 82, namely :

" (3.)   Height,   309.+ feet.

$\frac{1}{2}$base side,   243.+ "

$\frac{1}{2}$base diagonal,   343.+ "

Radius,   345.+ "

" These are the circular elements whence the complete

pyramid, as to its inside work, is fitly framed and put to-
gether."

Here the radius value is given at 345, and the diameter
value would be 345-2. But here in the word *B-Sadch*,
בי־שדה, we have 345-2, this very value. Not only so, but
adding the full values of the letters of the word *Sadch*, and
we have ש, 300 + ר, 4 + ה, 5 = 309, which is *just the
height* of this *pyramid three*, as shown. Not only so, but
the 343, gives the value 343 of the descending passage-
way. It is next to impossible to prevent the mind being
convinced that these lines of similitude are intentional,
where the various corroborative data are taken into bear-
ing. But, really, in connection with these pyramid coin-
cidences, there is one which seems absolutely to confirm
or establish the relation. It will be noticed that " *circular
elements three* " are connected with the problem of " *in-
terior geometrical construction*," agreeably to the diagram
shown in § 74 (*b*). Referring to that diagram, it will be
seen that the 309.397+ referred to is geometrically con-
nected with that angle, which has been supposed to be that
of the *roof of Campbell's chamber*, and of the *queen's
chamber*, in the pyramid. That angle has been shown to be
115° (see § 76). Now the name *Cain*, or קין, equals, tak-
ing the character values as they run, 115, as has been so
often referred to. Independently of this, in 345 we find
the name Moses, משה, = 345, used as *I am that I am*,
shown also to be 345, in the Pharaoh glyph. So, also,
345 × 6 = 217-0, or it is a multiple of the *heel*, or Jacob
value; while if 345 be bent into the form of a circle, it may
be read 354, or the lunar year value. Not only so, but in
the $\frac{1}{2}$ base side of these designated pyramid elements—
viz., in the value 243—we find the name Abram. More-
over, in this connection, it has been shown that the height
of the intersection of the floor line of the grand gallery
with the south wall thereof, above the base of the pyramid,
was diameter to a circumference of 5184, the solar day
value. Well, $5184 = \overline{72 \times 72}$, and this is the division of

the central square of 144 of the Cain Garden, or $144 \div 2$
$= 72—27$.   So, indeed, here in this combination is Moses,
Abram, *heel* or Jacob, with Jehovah, and Christ; and all
are developed in the pyramid.   The divided form of this
field would take the numerical display of

$$345—543,$$

which again presents strange features; for $543 \div 7 = 63$,
and $63 \div 7 = 9$.   But 7 and 9 are the characteristic values
of עץ, or *ots*, the tree of the Garden, the twining together
of the two parts of which indicates the חתן דמי, *chathan
dami*, or consummation of marriage, in its attendant blood-
shedding.   So, also, 7×7, or sevenfold, seems to look
toward the *sevenfold* of Cain, and the 70 and 7 fold of
Lamech. $7 \times 7 = 49$, the perfect square, to which if *one*
be added, the result is 50; and is the subject of the curious
note referred to in Land Marks of Freemasonry.   So, 345
$+ 543 = 888$, and somewhere this value is given as a Gnos-
tic value of Christ.   (Moses, 345; *I am that I am*, 543.)

(6.)   If one counts the days of the solar year from equi-
nox to equinox, or from solstice to solstice, he will find that
there is not an even division.   March 22, to the end of
March, inclusive, is 10 days; this, or $10 + 30 + 31 + 30 +
31 + 31 + 22 = 185$ days, and $365 — 185 = 180$ days, for
the other half, showing a preponderance of 5 days in the
upper half.   Include the solstice days in the lower half,
then the upper half has 183 days, and $365 — 183 = 182$;
showing a difference of 1 day as surplus preserved by the
upper half.   As to the solstices, from the 22d June to the
end of the month, inclusive, is 9 days.   Then $9 + 31 +
31 + 30 + 31 + 30 + 22 = 184$ days, and $365 — 184 = 181$
days, showing a difference of 3 days.   Reverse by giving
the solstice days to the other half, and 184 becomes 182,
and $365 — 182 = 183$ days, showing a difference of 1 day.
(Take the form in which 180 days becomes one of the
sides.   This was the number of years of the life of Abra-
ham.   Add the life of Isaac $= 175$ years, then $180 + 175
= 355$; where, to make the 360-year period, requires just
5 days.   Add this to 175, and we have for the Isaac side

180 also, and 180 × 2 = 360, or a year period of an exact balance. To perfect the other, or 365-day year, another 5 days has to be added; which heretofore we have found to be added to the lower half, or about the time of the 17th day of the 2d month, giving the preponderance to the lower half of the year of 5 days, instead of to the upper, as above. However, we see that by the addition of the 5 days, the balance is disturbed.) It was, perhaps, this inequality, or preponderance of one side over the other of the year, which went to make up the *mark* on Cain, who was a *nodder*, or *wabbler*, or " wanderer in foreign lands," having reference to the unequal motion of the earth with relation to the ecliptic in its nodding. There had to be a variation from a fixed standard of division, as of an even division, to complete the natural year in its period of days. This seems to be implied in Cain's expression, *"My sin is greater than I can bear,"* where the equivoque is perfect. The two salient words are *sin* and *bear*, related with each other by the comparative, i. e., *greater*. These two words are very remarkable. They are : *for my sin, āvoni*, or עֲוֹנִי, and for *than I can bear, min'sho*, or מִ־נְשׂוֹא. A better translation is : " My *descending* is greater than my *ascending*," or " my *left side* is greater than my *right side*." The word עָוֹן, *āvon*, has the meaning of *sin*, or of *copulation*, or of the *feminine quality*—found in various ways, as *nothingness, hollow*, as given already; and also *the left side* by comparison. Rachel, in dying, brings forth *Ben—oni*, or בֶּן־עֲוֹנִי, whom she calls " *son of my guilt, or sorrow*," as it is translated; but while he is this kind of a son, as related to her feminine quality of woman, he was designated in another way by Jacob, who changes his name at once, or in contrast, to *Ben—Jamin*, or " *son of my right side*," or of the " *light, clear region, the day side*," as contrasted with *sin, woman, dark*, or *left side*. So, also, these words give the idea of *male* side, as contrasted with *female* side. In 4th Gen. 7, as already used, are the words, " if thou doest well, there is dignity, excellence, *lifting up, exaltation*," as in contrast with "*sin*

lieth as a copulatrix at the door." The contrast word of
lifting up, etc., is *seath,* שְׂאֵת, from נָשָׂא, *nāsā.* Now,
this word is to be found as applied to Reuben by his father,
Jacob, where, by the translation, it is the *excellency of
dignity,* and where the words יֶתֶר שְׂאֵת, *yeter seath,* can
be the *prominence of my male part,* for immediately before
is the sentence, *"the beginning of my strength,"* where
for *strength* is, אוֹנִי, *āvoni,* which is the same with Rachel's
עוֹנִי, *āvoni,* or femininity; and can be used as *the begin-
ning of my sorrow,* in the sense of *my source of beget-
tings.* This description is laying the foundation for the
conclusion, which is, "unstable as water, thou shalt not
excel." Why? "Thou wentest up to thy father's bed;
then defiledst thou it: he went up to my couch." Here is
an instance of what Iranæus says, as quoted above. Par-
aphrased, the intent is, "Reuben, thou art my first born,
my eldest; who, by right of primogeniture, art the repre-
sentation of myself: as such, thou art myself as to the
place of begettings, and the *mean* of begetting, because
thou dost represent me. . . . Yet wentest thou up," etc.
But to this purpose, here *seath* and *avoni* are used as *mem-
brum virile* and *yoni.* But further, when Jacob wrestles
with the angel, he does so in the dark; and as he caught
the *heel* of his brother, so now Esau as the angel (see
Nork, Wörterbuch) wrestles with Jacob. The conclusion
of the wrestling is that Jacob's *thigh* is dislocated, or is
wasted, or shrunken, *as to its sinew.* This sinew which
shrank is the same word with *seath,* שְׂאֵת, from נָשָׂא, for
"נָשָׂא, with suffix נִשְׂאִי, then שִׂיא, more frequently שְׂאֵת."
(Fuerst.) Now, while *Nāsā,* נָשָׂא, is *to raise up,* to *ex-
tend upward,* to *rise high, nāshā,* נָשָׁה, is *to extend, stretch
out,* showing the sameness of the words as cognate: then
there comes, as related, נָשָׁה, *nāshā, the large hip sinew;*
and, in fact, the rabbinical reading of this is, according to
Nork, "*spannader für den phallus,* אבר המשגל." (See
under Jacob.) So also, it could be taken as the assump-
tion of the feminine quality in this wrestling. After this
struggle in the dark, his name is changed from its feminine

character of Jacob to Israel, altogether masculine, implying
here the change from the dark to the light part of the year,
the boundary line between which was *the brook* which he
crossed, or Pani-El, or the division line at the solstice, pre-
cisely as in the description of Cain, as going up from Tobi
and descending from Pani, the same solstice line is desig-
nated. Under "Jacob," Nork says : The cardinal or hinge
point is "therefore called Pani-El (פני־אל), i. e., *change*
or *turning* of the (*time*) god, that place where Jacob
wrestled with the demon, in whom the rabbins recognize
Esau, from whom the name of the boundary river Jabbok
(יבק v. אבק, to wrestle), and overcome him." Pani-El and
Jabbok are used interchangeably.

His going up was *Seath*, or male, and his descending
was on the other side toward the characteristic of that side
—viz., *female*. The male was his *right side*, the female
was his *left side*. Now from summer solstice to winter
solstice is $9 + 31 + 31 + 30 + 31 + 30 + 22 = 184$ days,
and $365 - 184 = 181$; so that the female side was greater
than the male side by 3 days. Or, considering the circle
of the year as the form of a man-woman, his left side at
the hip would be greater than his right side; or, his *sin*
side was greater than his male side. And this goes to
show that the glyphs of Cain and Abel, and of Jacob and
Esau, are to this extent alike, as having reference to the
same phenomenon. Now as to the mark set on Cain.
The words are וישם יהוה לקין אות, V'yāsem Yehovah
l'kayin, oth, where the predicate yāsem, ישם, is the apoca-
pated future *hifil*, from *shūm*, שום. Of this word under
(11.), Fuerst says : " Properly, *to be veiled*, hence *to be
obscured, darkened;* metaphor, *to be impotent, weak;* fig.,
to be on the left—the left side being regarded as the weak
one; the left district as the obscured, concealed one. See
צפון, *Tsaphon;* שמאל, *Samael.*" *Tsaphon* "is the dark,
wintry hemisphere, the dark region, where the sun and the
stars are extinguished, and the light of heaven is swallowed
up." *Samael* "is the veiled, dark region of the north;
what is turned to the north, *the left side, the left hand.*"

It was reported, rabbinically, that Kin (Cain) the Evil was the son of Eve by Samael the devil, who occupied the place of Adam.

So the reading of the line is: "And the Lord caused impotence to Cain, or weakness, or loss, on the left side, as a mark or token," etc.; and this corresponded with the lameness of Jacob, and also with the lameness of Vulcain. This impotence has nothing to do with the left side being the largest, but with its female quality; for it is ascribed by the rabbins to that of the virile power, which is extinguished in the dark or female part of the year, which commences with the vintage, the sun in Scorpio, just where, by the Persian symbolization, the Bull suffers castration by the Scorpion, or just where the ' of Jehovah conceals itself in Hovah.

(7.) As one after another of the allegorical uses comes up, and is explained, the aggregation all tending to one elucidation, serves to clear away the ambiguity and equivocation from the remainder. It is seen how fitly the Egyptian mode of hieroglyphic expression fits to the Hebrew use. As there was a common underlying use in numbers and geometrical forms, as in the Bible there is constant reference to a mysterious connection between the Hebrews and the Egyptians, so there seems to have been an interchangeable use of a common mode of expression. This accords with the statement of Seyffarth (Chro., p. 34):

" Now, we know that with Abram, 1150 years after the flood, 484 years after Phaleg, during whose life the Egyptians and all the other ancient nations emigrated from Babylonia—i. e., 2781 B. C.—the Hebrews left their original place of abode. These Abramidæ spoke Hebrew, and consequently this same language must have been indigenous in Chaldea. But as Menes also came from Chaldea only 484 years before Abraham, *the ancient Egyptian language must be intimately related to the Hebrew.*"

And this agrees with what one so frequently finds as to the, by statement, passing over of old Phenician radicals into the formation of hieratic words, to the Egyptians, Babylonians, even Hindus, Greeks, Latins, Germans, and especially British, showing a common reservoir of knowledge

for all these ancient people. Already we have seen this
to be the case as to *Arets*, Mars, *Tobi*, and *Pani*, in
especially hieroglyphic connections. The equivocation in
the narrative scene of Cain and his brother Abel, as to the
slaying, as to "*cursed art thou*," as to "*my sin is greater
than I can bear*," is perfect. But these are preceded by
one just as great in the words of warning to Eve. The
Garden scene was the picture of that sinful transgression
culminating in the universal fall of man (or better, of
woman), bringing upon an innocent progeny unnumbered
woes. In the very first exertion of his divine power, God,
we are led to infer from the simple narrative, set a trap for
his most simple-minded and ignorant son and daughter.
There seems to be, on the face of this "as in Adam all
fell," a sort of *non sequitur*, as relates to the honorable and
merciful character of the inventor. But, manifestly, and
to speak seriously, as relates to humanity, the Garden was
the scene of the creation of and first recognition by the
sexes of their difference of organism ; also of their sexual
introduction the one to the other. Now, the little deeper
reading of the narrative turns the mask and shows the nat-
ural and true intent, thus spoiling the equivocation. While
Adam was in the hermaphrodite condition—i. e., before the
woman was taken from him—he or she is told as to the for-
bidden fruit, "for in the day thou eatest of it, *dying thou
shalt die*." (Gen. ii. 17.) מות, *mūth, dying*, תמות, *Tā-
mūth, thou shalt die*. That this was said to *her* is clearly
implied in verse 3 of the third chapter, where the words are
the same. The following, as to the Egyptian, will lend
further and singular reflections on this subject :

"*Muth*, or *Mouth*, was the Egyptian cognomen of Venus (Eve,
mother of all living), or *the moon*. Plutarch (Is. 374) hands it
down that ' Isis was sometimes called *Muth*, which word means
mother. Either *Man*, or *Maut*, means *nurse, mother*. Perhaps
Muth is to be derived from *Man-tho, mater-terra* (Eve-Adam),
which being the fact, *Muth* differs in nothing from Isis, queen of
the earth (Issa, אשה, *woman*).' (Is., p. 372.) Isis, he says, is
that part of nature which, as feminine, contains in herself, as
(nutrix) nurse, all things to be born. ' Certainly the moon,'

speaking astronomically, ' chiefly exercises this function in
Taurus, Venus being the house (in opposition to Mars, *gener-
ator*, in Scorpio), because the sign is luna, ☽, hypsoma. Since
truly it may be taken from this passage of Plutarch, that Isis
Metheur differs from Isis *Muth*, and that in the vocable *Muth*,
the notion of bringing forth may be concealed, and since fruc-
tification must take place, Sol being joined with Luna in Libra,
it is not improbable that *Muth* first indeed signifies Venus in
Libra ; hence Luna in Libra." (Beitrage zur Kenntniss, pars
11, § 9, under *Muth*.)

Now there is not a word of this description which is not
fitted to the scope of the Garden of Eden glyph. It is
part and parcel of the same learning that gives the Egyptian
ARTS, as the Phenician and Hebrew ARTS, in the first
chapter of Genesis. Now consider the correlating terms,
Sin with *Intercourse*, and the symbol of *death* being but
that of *birth*, as they have relation to the place Scorpio,
the opposite to, yet connected *in the center*, with Taurus-
Venus, and the conclusion is irresistible, that in the words
"*dying thou shalt die*" (that is, in Scorpio), we have by
correlative reading and meaning " *conceiving thou shalt
become a mother*." And this agrees with the fact related ;
for she did *eat the fruit*, she *did not die*, and she did *be-
come a mother*. This shows the double play upon the word
Muth, מות, by help of which the real intent is produced in
the occult way, as intended. *Sin, death*, and *woman* are
one in the glyph, and are correlatively connected with *in-
tercourse* and *birth*. This derivation once stated, finds
full confirmation on its own Phenician, or Hebrew soil.
The word Bohu, בהו, *void*, has been seen to be taken for
Eve-Venus-Naamah. Fuerst, under Bohu, בהו, says :

" In this primitive signification was בהו taken in the Biblical
cosmogony, and used in establishing the dogma (מאין ש״, *Jes-
(us), m'aven, Jes-us from nothing*), respecting creation.
Hence, Aquila translates οὐδέν, vulg. vacua " (hence *vacca, cow*),
" Onkelos and Samarit, ריקן. The Phenician cosmogony has
connected *Bohu*, בהו, Βαού, into a personified expression denot-
ing the *primitive substance*, and as a deity, the *mother of races
of the gods*. The Aramean name בהורת, בהורת, בהורתא, Βαώθ,
Βνθ-ὺς, Buto, for the *mother of the gods*, which passed over to

the Gnostics, Babylonians, and Egyptians, *is identical then with* Môt (מות, our *Muth*), properly, Βόϑ (בהות), *originated in Phenician* from an interchange of *b* with *m*."

This .view assists also to another facility for interpretation. Each sign to be mentioned was a double sign, or male-female—viz., it was Taurus-Eve, and Scorpio was Mars-Lupa, or Mars with the female wolf. So, as these signs were opposites of each other, yet *met in the center*, they were connected; and so in fact it was, and in a double sense, the conception of the year was in Taurus, as the conception of Eve by Mars, her opposite, in Scorpio. The birth would be at the winter solstice, or Christmas. On the contrary, by conception in Scorpio—viz., of Lupa by Taurus—birth would be in Leo. Scorpio was Chréstos in *humiliation*, while Leo was Christos in *triumph*. While Taurus-Eve fulfilled astronomical functions, Mars-Lupa fulfilled spiritual ones by type.

The workings out of this glyph of 4th Genesis help to the comprehension of the division of one character into the forms of two persons; as Adam and Eve, Cain and Abel, Abram and Isaac, Jacob and Esau, and so on. It helps, also, to take the horrid blemish off from the name of Cain, as a put-up job to destroy his character; for, even without these showings, by the very text, *he was Jehovah*. So the theological schools had better be alive to making the amend honorable, if such a thing is possible, to the good name and fame of the God they worship.

(8.) Now, as linking together several great salient points in the Biblical structure : (1.) As to the Old and New Testaments; with, also, (2.) as to the Roman empire; (3.) as to confirming the meanings and uses of symbols; and (4.) as to confirming the entire explanation and reading of the glyphs as (5.) recognizing and laying down the base of the great pyramid as the *foundation square* of the Bible construction, (6.) as well as the New Roman adoption under Constantine—the following is given :

Cain has been shown to be the 144—441 form of the Garden, based upon a square of $\overline{144 \times 144}$ in the center.

He has been shown to be the 360 circle of the zodiac, the perfect and exact standard, by a squared division; hence his name of Melchizadik. He has been shown to be the distributer or adjuster of the 365-day year on this square of 360 or 36. The Hebrew year has been shown to be the base, in Abram, 180 + Isaac, 175 = 355. This + 5 = 360, or Cain, and 355 + 10 = 365, by which the solstice and equinox points of the 360 or zodiac (or life) circle are made to fall back, as to the months of the 365-day year, so that the equinox points shall fall, as for months, on the *first day of October*, or Scorpio, and its opposite; while the solstices are to be marked by *Leo* and its opposite. This was a Hebrew use and recognition under the squared form; they taking out the 3d *quadrant*, *cube*, of which Leo and Libra, bordering on Cancer and Dan-Scorpio, were the corner controllers. But this corner cube, worked in on to *the square of the entire year*, was made to preserve this same order, by *Leo* and *Dan-Scorpio* being made to hold, respectively, the two controlling corners of the great square. Now, this was all founded on the Cain-Adam square; or, as shown, *the square of the base of the great pyramid.* Take this square, as the *Cain-Adam* square of 144—441, with the central or *Adam* square of $12 \times 12 = 144$ (either as a line or as area); and, holding the numerical value as inches, take the same square, as reduced to feet :

			B
	3	*4*	
	2	*1*	
			A
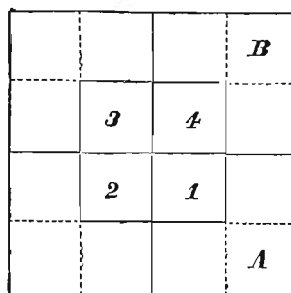
By the very force of construction, the larger square will be laid off into blocks of 6×6 feet, and its circumference will exhibit *a face* divided into 12 of these squares, and 12×6

$= 72$ feet, or for a line circumference of $24 \times 4 = 96$ feet; while the interior or Adam square is shown to be divided into 4 blocks of $\overline{6 \times 6}$ feet each. It has been repeatedly stated that the object of the great pyramid construction was to measure the *heavens and the earth;* therefore, its measuring containment would indicate all the substance of measure of *the heavens and the earth*, or agreeably to ancient recognition, *Earth*, *Air*, *Water*, and *Fire*. (The base side of the pyramid was diameter to a circumference in *feet* of 2400. The characteristic of this is 24 feet, or $\overline{6 \times 4} = 24$, or this very Cain-Adam square.) Now, by the restoration of the encampment of the Israelites, as initiated by Moses, by the great scholar, Father Athanasius Kircher, the Jesuit priest, the above is precisely, by Biblical record and traditionary sources, the method of laying off this encampment. The *four interior squares* were devoted to (1.) Moses and Aaron; (2.) Kohath; (3.) Gershon; and (4.) Merari—the last three being the heads of the Levites. The attributes of these squares were the *primal* attributes of Adam-Mars, and were concreted of the elements, *Earth*, *Air*, *Fire*, *Water;* or ם' = Iam = *Water*, נור = Nour = *Fire*, רוח = Rouach = *Air*, and יבשה = *Iābeshah* = *Earth*. The initial letters of these words are INRI. This square of INRI is the *Adam square*, which was extended from, as a foundation, into four others of $\overline{144 \times 2} = 288$, to the side of the large square, and $288 \times 4 = 115\text{-}2, =$ the whole circumference. But this square is the display of also circular elements, and 115-2 can denote this. Put INRI into a circle, or read it as the letters stand in the square, as to its values of 1521, and we have
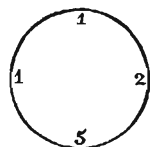
which reads 115-2 of this fact. But, as seen, Cain denotes this as, or in, the 115 of his name; which 115 was the very

complement to make up the 360-day year, to agree with
the balances of the standard circle, which were Cain. The
corner squares of the larger square are, $A = $ Leo, and $B = $
Dan-Scorpio; and it is seen that Cain pierces Abel at the
intersection of the equinoctial with the solstice cross lines,
referred to from Dan-Scorpio, on the celestial circle. But
Dan-Scorpio borders on Libra, the scales, whose sign is
♎ (which sign is that of the ancient *pillow*, on which
the back of the head to the ears rested, the pillow of

Jacob), and is represented for one symbol as $\overline{\underset{\text{X   P   S}}{\frown}}$

as has been shown. But also the badge of Dan-Scorpio

is *death-life*, in the symbol ☧ as *cross-bones and skull*,

or *back of the head*, or *life-death;* and this was the mono-
gram of *Chréstos*, and the *Labarum*, or standard of Constan-
tine, the Roman emperor. Abel has been shown to be
Jesus, and Cain-Vulcain, or Mars, pierced him. Constan-
tine was the Roman emperor, whose warlike god was Mars,
and a Roman soldier pierced Jesus on the cross; so that
the three unite under this characteristic. But the piercing
of Abel was the consummation of his marriage with Cain,
and this was proper under the form of Mars-Generator;
hence the double glyph, one of Mars-Generator and Mars-
Destroyer in one; significant, again, of the primal idea of
the living cosmos, or of birth and death, as necessary to
the continuation of the stream of life. Now, the cross is
the emblem of the *origin of measures*, in the *Jehovah*
form of a *straight-line* ONE *of a denomination of* 20612, *the
perfect circumference;* hence Cain was this as Jehovah,
for the text says that *he was* Jehovah. But the attachment
of a man to this cross was that of 113 : 355 to 6561 : 5153
$\times 4 = 20612$, as shown. Now, over the *head* of Jesus cru-
cified was placed the inscription, of which the initial letters
of the words have always been retained as symbolic, and
handed down and used as a monogram of Jesus Chréstos—

viz., INRI, or *Jesus Nazarenus Rex Judæorum;* but they
are located on the *cross* or the cubed *form* of the circular
origin of measures, which measure the substance of *Earth*,
Air, *Fire*, and *Water*, or INRI $= 1152$, as shown. Here
is the *man* on the *cross*, or $113 : 355$ combined with
$6561 : 5153 \times 4 = 20612$. These are the *pyramid-base*
numbers, as coming from $113 : 355$ as the Hebrew source;
whence the Adam square, which *is* the pyramid base, and
the center one to the larger square of the *encampment.*
Bend INRI into a circle, and we have 1152, or the circum-
ference of the latter. But Jesus dying (or Abel married)
made use of the very words needed to set forth all. He
says Eli Eli Lamah Sabachth-ani

<div dir="rtl">אלי אלי למה שבחת־ני:</div>

For, read them by their power values, *in circular form*, as
produced from the Adam form, as shown, and we have
$\text{אלי} = 113$, $\text{אלי} = 113$, or $113{-}311 :$ $\text{למה} = 345$, or
Moses in the Cain-Adam pyramid circle : $\text{שבחת} = 710$,
equals Dove, or Jonah, and $710 \div 2 = 355$, or $355{-}553$;
and finally, as determinative of all, נ, or *ni*, where $\text{נ} =$
Nun, fish $= 565$, and $\text{י} = 1$ or 10; together $565^{1} = \text{יהוה}$,
or the Christ value.

And thus closes the relation between the Parker and Me-
tius forms of numbers in construction of the great pyramid,
with their Biblical use; and it is seen that the pyramid
stone book is the equivalent of the Old and New Testaments.

Attention is called to part of the 46th verse of the 27th
chapter of Matthew, as follows : " Eli, Eli, Lama Sabach-
thani?—that is to say, My God, my God, why hast thou
forsaken me?" Of course, our versions are taken from the
original *Greek* manuscripts (the reason why we have no
original Hebrew manuscripts concerning these occurrences
being because the enigmas in Hebrew would betray them-
selves on comparison with the sources of their derivation,
the Old Testament). The Greek manuscripts, without ex-
ception, give these words as—

<div align="center">Ἠλὶ Ἠλὶ λαμὰ σαβαχθανί.</div>

They are *Hebrew words*, rendered into the *Greek*, and in Hebrew are as follows :

אלי אלי למה שבחת־ני״

The Scripture of these words says, " that is to say, My God, my God, why hast thou forsaken me?" as their proper translation. Here then are the words, beyond all dispute ; and beyond all question, such is the interpretation given of them by Scripture. Now the words will not bear this interpretation, and it is a false rendering. The true meaning is *just the opposite of the one given*, and is—

  My God, my God, how thou dost glorify me!

But even more, for while *lama* is *why*, or *how*, as a verbal it connects the idea of *to dazzle*, or adverbially, it could run " *how dazzlingly*," and so on. To the unwary reader this interpretation is enforced and made to answer, as it were, to the fulfillment of a prophetic utterance, by a marginal reference to the *first* verse of the *twenty-second* Psalm, which reads :

  " My God, my God, why hast thou forsaken me?"

The Hebrew of this verse for these words is—

אלי אלי למה עזבת־ני״,

as to which the reference is correct, and the interpretation sound and good, *but with an utterly different word*. The words are—

  Eli, Eli, lamah azabvtha-ni?

No wit of man, however scholarly, can save this passage from *falseness of rendering* on its face ; and as so, it becomes a most terrible blow upon the proper first-face sacredness of the recital. There is but one, and there is one escape, and that is by having resort to the *mystical intent*. The Hebrew phrase *was purposed* as it reads, and its antagonistic and false rendering *was purposed* as it reads. It was on the same principle already mentioned, of the crossed bones and skull, as an emblem of death, being placed over the door of life and signifying *birth*, or of the intercontainment of two opposite principles in one, just as, mystically, the Savior was held to be man-woman. *This was the idea intended*, and interpreted thus, the passage

suffers no violence of distortion.　Above, the numerical values of the words have been given, as connecting themselves with the INRI, or $288 \times 4 = 1152$, of the inner square and outer square of the encampment, which at the same time is the base of the pyramid, by equivalence. But by these numbers, Eli is 113 (by placing the word in a circle) ; Lamah being 345, is by change of letters to suit the same values מֹשֶׁה (in a circle), or Moses, while Sabachth is John, or the dove, or Holy Spirit, because (in a circle) it is 710 (or 355×2).　The termination *ni*, as *nuni*, or 565[1], becomes Jehovah.　Connecting this phrase with INRI, and it throws light upon the transfiguration scene on the mount.　There were present there Peter and James and John with Jesus : or יָם, Iami, James, *water;* יְבֻשָׁה, Peter, *earth;* רוּח, John, *spirit, air,* and נוּר, Jesus, *fire, life*—together INRI.　But behold Eli and Moses met them there, or אֵלִי and לְמָה, or *Eli* and *lamah,* or 113 and 345. And this shows that the scene of transfiguration was connected with the one above set forth.

As closing these appendices, it is thought appropriate and instructive to insert some comments upon the "*Study of the Bible,*" made by a clergyman of New York city, and published in the *Tribune.*　The difficulties surrounding the text of the Bible, as received and interpreted, for a satisfactory comprehension of the contents of The Book, are ably and clearly set forth.　Their setting forth seems to point to the existence of a *key of interpretation* not as yet known or made use of.　That part of these comments which is thought pertinent to the present inquiry, is as follows :

"The Church is to conserve the Scriptures, because they conserve the Church.　The Jewish Church made the mistake of conserving the mere letter, and hence became corrupt.　The Scriptures are not the letter, but the spirit beneath the letter, reached by the letter.　The Church, then, rightly conserves the Scriptures when, by diligent investigation through and beneath the letter, it binds the varied truth of God fast to its life by a thousand cords of knowledge and affection.　With this view, then, of the study

of the letter of Scripture as the necessary avenue to reach its di-
vine truths, and as thus following the injunction of the Savior in
the text, we may notice three classes of difficulties which invite
this study, and to the solution of which the careful and concen-
trated search is essential.

" The first difficulty is the apparent want of harmony in the
different portions of the sacred volume. This has been the favor-
ite battle-ground of infidelity. Here it uses with effect its *argu-
mentum ad speciem*, and makes its crafty conquests. The Eloh-
istic and Jehovistic chapters of Genesis are irreconcilable ; the
Pentateuch bears marks of a post-Mosaic origin in its allusions
to the character and the death of the lawgiver ; the chronology
of the historical books is hopelessly confused and false ; the two
genealogies of Jesus are in direct conflict ; all the accounts of the
inscription on the cross are discrepant ; indeed, the four Gospels
present a hundred points of difference and antagonism. James
and Paul teach, as respects one another, contradictory doctrines,
and the New Testament presents a system of salvation and eternal
life wholly inconsistent with that of the Old Testament. These
are the chief charges that are made where *prima facie* evidence
is on the enemy's side, and, as with the majority of our race,
prima facie evidence is all that men care to have against any-
thing they wish to avoid, these charges gain a common currency,
and repeat themselves in every age. To meet these charges and
their pernicious effects, a knowledge of the *media* through which
the Divine Spirit communicated the truth is necessary. The
mind must take a range through 1,500 years, from Moses to John,
and examine the variations of language and customs, the history
and national economy of the Jewish people, as well as those of
the great kingdoms of the Nile, the Tigris, and the Euphrates.
We must recognize the full idiosyncrasy of each sacred writer
under the divine afflatus. It must explore the analogies in expe-
rience, where different standpoints reveal apparent discrepancies.
It must learn to weigh words as they are given us in the Semitic
and Hellenic tongues, and detach them from the prejudice of a
translation. It must find the special object that was before a
writer's mind, and these special circumstances in which his utter-
ances first took place. It must review the laws of authorship
and editorship, and determine their influence upon the sacred
books. It must become familiar with the great landmarks of
chronology, and be able to establish the synchronisms of the

Scripture narrative. Only in this way can scoffing infidelity be answered, and the pious mind be edified by a discovery of the perfect harmonies of the Divine Word.

"A second difficulty is akin to the first, and can be easily compared with it. It is the obscurity of the text. It does not appear to contradict itself, but its very meaning is a puzzle. The ordinary reader sees only a chaos, and either looks over the passage till he finds some plain words to satisfy him, or he performs the dangerous task of guessing where he has no data, and so makes the Scripture to speak falsely. To overcome this difficulty we need all the appliances which are requisite in reading the alleged discrepancies of the Word, and these are to be used in an intenser degree. History and geography must be ransacked and arranged in the mind ; the oriental habits and styles of thought must be familiarized ; bigotry and narrowness must be abandoned for a broad view of the race and a generous sympathy for human development everywhere. Especially are the two languages of Scripture to be carefully studied—the sterility of Hebrew, whose obscurity lies in its poverty, and the flexible and beautiful Greek, whose obscurity lies in its richness. The English translation is one of the best ever made, perhaps the very best after the Hollandish, and this English translation is so endeared to us by tenderest associations that it would not be wise to set it aside for another. If any change be made, our old version must remain the basis, and only such alterations effected as truth and righteousness demand. Our holy religion does not require us to be blind moles, but to use our eyesight and discriminate everywhere between the true and the false. The religion of Jesus courts the fullness of light, and loathes the conservatism of conventionality, prejudice, and ignorance. With all the excellence of our English version, it bears marks of the human imperfection of the translators, as where they hide away the word ' bishops,' in Paul's address to the elders of Miletus, and call it ' overseers,' and where they call the Passover the heathenish name of ' Easter.' Besides such willful errors, they erred often through ignorance of the language they translated. The Hebrew and the Greek are far better understood to-day than in 1611.

"But I turn from the obscurity of the text to a third difficulty which demands search, to wit, the apparent collisions between Scripture and science. The God of the Scriptures is the God of nature, and the explanation of nature will only magnify the Scriptures. We know that, but we must show it to the world.

The scientific investigations of this age are manifold and energetic, and it is for the Christian to rejoice in all the discoveries which throw light on God's wonderful works in the material universe. It is for him to follow the physical philosopher, and to weigh his stated conclusions, to judge whether they are warranted by his premises (and this does not require a scientific knowledge, common sense will do it), and then bring the truth from God's Word, that these truths from the natural world may help explain the sacred texts, just as our historical or linguistic facts have been used before. In this way the supposed antagonism between geology and Genesis in the questions of cosmogony, the origin of the race, and the deluge, will be dissipated, and the light of the Word shine the more brightly. The lowest doubts of thoughtful men will be respected and overcome, and the cause of truth promoted. It will not do to ignore these questions. If they attack God's Word, we must use them as means of searching God's Word. To yield to the bold assertions of science versus Scripture is weakness; while to shut them out from examination and dogmatically denounce them, is not only weakness but meanness. The only honest and manly way is to put science and Scripture together, and look at them as you do through telescopic glasses, till the two views blend in a harmonious unity, and proclaim their common authorship.

" ' Search the Scriptures ' is the law of His Church and the talisman of His bounty. Let us, then, no longer please the devil and cramp our piety by neglecting the Bible. Let us bring the strength of our being to the careful and prayerful exploration of the fertility of revelation, where grow the flowers and the fruits of Paradise. Let us be zealous in the study of the letter, that we may reach the mind of the Spirit. Let us use the Inspired Word as the medial glass through which we may the more clearly see and know our Lord Jesus Christ."

CONCLUSION TO APPENDICES.

Authorities for an Esoteric Reading of the Bible.

§ 97.   As is seen, the great display of the *creative law of measure* among the Egyptians was in that " *wonder of the world*," the great pyramid.   Among the Hebrews it was in (1.) the Garden of Eden ; (2.) the Ark of Noah ; (3.) the Tabernacle ; and (4.) the Temple of Solomon. Around these actual displays, description was conveyed by the hieroglyphic reading of the narratives of the Holy Writ.   " Wo be to the man who says that the Doctrine delivers common stories and daily words !   For if this were so, then we also in our time could compose a doctrine in daily words which would deserve far more praise.   If it delivered usual words, then we should only have to follow the lawgivers of the earth, among whom we find far loftier words to compose a *doctrine*.   Therefore, we must believe that every word of the Doctrine contains in it a loftier sense and a higher meaning.   The narratives of the Doctrine are its cloak.   The simple look only at the garment—that is, upon the narrative of the Doctrine ; more they know not.   The instructed, however, see not merely the cloak, but what the cloak covers." (The Sohar, 111, 152 ; Franck, 119.)   So the Church : " If we hold to the letters, and must understand what stands written in the law after the manner of the Jews and common people, then I should blush to confess aloud that it is God who has given these laws :   then the laws of men appear more excellent and reasonable." (Origin, Homil. 7, *in Levit.*)   " What man of sense will agree with the statement that the first, second, and third days in which the *evening* is named, and the *morning*, were without sun, moon, and stars, and the first day without a heaven ?   What man is found such an idiot as to suppose that God planted trees in Paradise, in Eden,

like a husbandman, etc. ?   I believe that every man must
hold these things for images under which a hidden sense
lies concealed." (Origin ; Huet. Originiana, 167 ; Franck,
121, quoted from Sod. " Genesis," p. 175.)   "THE MYS-
TERIES OF THE FAITH NOT TO BE DIVULGED TO ALL.
But since this tradition is not published alone for him who
perceives the magnificence of the word, it is requisite,
therefore, to hide in a mystery the wisdom spoken, which
the Son of God taught." (Clemens Alexandrinus, Strom.
12.)   "For we shall find that very many of the dogmas
that are held by such sects (of barbarian and Hellenic phi-
losophy) as have not become utterly senseless, and are not
cut out from the *order of nature*," are held in common
with us, the token of recognition being " by cutting off
Christ." (Same, Strom. 13.)   The following reflections
and notes seem appropriate as pointing an application of
these statements in various phases of a same system ; it
being premised that the germ or key of all these hidden
meanings lay in the possession of the method of measure,
and in the measure which the Lord God used in the con-
struction of the universe.

The Esoteric Teaching Confined to the Few.

§ 98.   The author believes that no man can study the
Bible a great while, carefully and dispassionately noting
its place in the world, its surroundings, its handings down,
its prophetical bearings, not considered in detail, but in
their large and comprehensive scope, without coming to
the conviction that a Divine power and providence doth in
some way or sort hedge it about, and without coming to
the conviction that this Divine Power is a conscious entity,
just as we are ; that He is, by His superiority, wisdom,
and power, continually and everywhere, intelligently pres-
ent as the *immediate cause* of each sequence in all the
universe, however minute.   (Not working by positive fixed
laws of construction, which, once enacted, the work can
forever go on, without any immediate supervision of the
Master, a postulate so commonly assumed ; for it is observ-

able, where investigation can reach, that while *every type* of work seems to be under a *general type law*, yet every *individual* production under a type is clearly enough seen to be *a variation* upon every other individual, thereby necessitating the actual intervention of creative power for every individual created under such a law.) He who considers that man alone is the only phenomenon in all the wide universe of a conscious intelligence, as concreted from an infinite number of blind happenings or accidents, arrogates very much to the superiority of his accidental position, especially when he takes into view his own acknowledged littleness and inferiority ; for he that can make nothing is yet superior to the blind working of the elements to which he is indebted for himself, which elements come under the general term of *God* or *Nature*. What a picture of self-sufficiency ! The conscious entity, *man*, simply proves series after series of just such a class of entities, graded upward, past man's power of recognition. Man's *ego*, as connected, even, say, inseparably with his body, is just that phenomenon of nature that implies an *ego* function of nature herself, as inseparably connected with grosser material than that function. The only question is as to whether, in man, or otherwise, this function can shed its covering for another ; or whether, in fact, he may have two kinds of material body, one of which may continue, the other perishing.

But apart from this, and as to the Bible this being said, there are, nevertheless, some strange features connected with its promulgation and condition. Those who compiled this Book were men as we are. They knew, saw, handled, and realized, through the key measure, the *law* of the living, ever-active God. They needed no faith that He was, that He worked, planned, and accomplished, as a mighty mechanic and architect. What was it, then, that reserved to them alone this knowledge, while, first, as men of God, and second, as apostles of Jesus the Christ, they doled out a blinding ritual service, and an empty teaching of *faith*, and no substance as proof, properly coming through the

exercise of just those senses which the Deity has given all men as the essential means of obtaining any right understanding? *Mystery*, and *parable*, and *dark saying*, and *cloaking* of the true meanings are the burdens of the Testaments, Old and New. Take it that the narratives of the Bible were purposed inventions to deceive the ignorant masses, even while enforcing a most perfect code of moral obligations : How is it possible to justify so great frauds, as part of a Divine economy, when to that economy the attribute of simple and perfect *truthfulness* must, in the nature of things, be ascribed ? What has, or what by possibility ought mystery to have, with the promulgation of the truths of God ?

Are the Keys of this Esoterism Lost?

§ 99.   Men like ourselves, who were capable of teaching the multitudes, held this knowledge, both in the times of the Old and of the New Testament. If at all, when was this knowledge lost? There is witness, by the emblems remaining in use, that two modern bodies have at one time been in possession of the keys—viz., (1) that order called the Roman Catholic Church, which *is catholic* to the extent of possession of the emblems of the universal knowledge, which was confounded by the confusion of *lip*, and which possession has been dropped by all sects, creeds, etc., which have dropped the consideration of the basic knowledge or *dabvar;* and (2) that body of men called Free Masons. It is probable that the Greek Church, and the Brahmin system also, come under this category. The elimination of the vestiges of the workings by the key system can even be seen in the English Church ; for one of the great functions of the church was to regulate the order and times of its holidays. This was done agreeably to the passage of the sun in his circuits through the signs ; but in the preparation of the order of service, as it is to be seen on the original rolls (see *fac-simile* of the *Black Letter* Prayer-Book, made in 1663, as taken from the original rolls or scrolls in the British archives), it was deemed, for

some reason, best to wipe out those calendars teaching the progress of the sun through his signs. (There is but little doubt that the rules for the calculation of tables of time, to mark the proper observance of religious festivals, which tables are prefixed to the Book of Common Prayer, are precisely the same to be found in the first chapters of Genesis, relating to the founding the year values on *lunar tables*. Christianity is almost undoubtedly indebted to the ancient Jewish and Egyptian calendar rules, on which she built up the special exceptional details of her own forms.)

Resolutions of the Academy of Sciences and of the Royal Society.

(1.)   One of the most remarkable proofs of the existence of this knowledge (of the foundation of these mysteries on the Parker and Metius relations of circumference to diameter of a circle), down to a very late day, lays, as it would seem, in the resolutions passed by those two learned bodies of men, the Academy of Sciences at Paris and the Royal Society of London. (See Parker's Quadrature.) It was in the period of the revival of knowledge, when the world, possessed of extraordinary intellects and wholly athirst for learning, was investigating every cranny and department of nature.   All recognized the fact that in nature one of the most interesting relations was that of circular to plane shape, and the flux of one into the other.   Ordinarily, in matters of research, promising great rewards, none so persistently encouraging of interminable effort in the pursuit of the obscurer realms of science as these bodies.   What was the reason, then, that on the production by Legendre of his acknowledgedly approximate value of π, the Academy of Sciences passed that famous resolution that it would never entertain any thesis on the subject of the quadrature of the circle?   What was the reason that, in a few years afterward, upon Playfair's following in the footsteps of Legendre, the Royal Society of London passed, perhaps, a copy of the same resolutions?   Since that time, every man daring to venture into that forbidden field of research

has been, by a mysterious common consent, hooted down,
laughed at, and derided, by the manifestations of a mock-
ing false pity ; and just in the measure that his works have
proved valuable, just in that measure has the effort been
strong to remove them from the study of the people.   Now,
it is barely possible that the keys of these old mysteries are
still known and held by very few ; that these few are recog-
nized by the very highest of the order, so that an order to
that effect of procurement of just such a piece of chicanery
as that practiced by these societies, once promulgated,
would be obeyed and carried into effect willingly, and
even zealously, by multitudes of those who might remain
in perfect ignorance as to the source of the order or as to
its real object.

   *There are, moreover, two evidences of the modern ex-
istence of this knowledge in symbolism.*

   (2.)   In " The Gnostics," Plate VI., 1, is to be found a
Templar or Rosicrucian emblem.   It is of that "*Idol,*" or
"*old man,*" a worship of which was charged against the
Templars.   It is of an *old man*, with his arms *crossed* in
front.   At his feet, on one side, is a *celestial globe*, with its
subdivisions, and on the other side the *pentapla*, or five-
pointed star, or *seal* of Solomon.   Here are displayed the
man, 113, or diameter value to a circumference of 355, or
the Hebrew man, the celestial circle, and *the pyramid*.
The *pentapla*, as it is drawn, is but the lined display of a
pyramid.   It is a pentagon, as well as a rayed star.   Retain
the rays, and then join the corners by lines, and the object
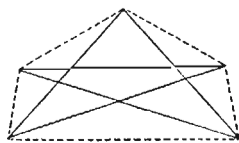
of setting forth a pyramid is at once apparent.   The pyra-
mid involves all the measures, with the purposes thereof
enumerated in the text ; so the whole of this picture symbol,
though modern in its use, really disylaps the possession of

the keys of the ancient knowledge in a most masterly manner.

(3.) In "*Land-Marks of Free Masonry*," by Oliver, is to be found a frontispiece, which, for magnificence of conception and for comprehensiveness of grasp, is most remarkable. It is said to contain the symbolization of the *genius* of free masonry, and is said to have been designed by Br. Com. J. Harris, P. M. and P. Z. The author ventures to state positively that if this was really designed by this gentleman—that is, if he did not compile it from simply traditionary sources—then, indeed, *he must have been* acquainted with the elements of the quadrature as John A. Parker has, since that time, set them forth, their astronomical application in architecture, and their Biblical containment, in a fashion of such wisdom that if the author had possessed it in its details, his efforts in this work could have been relieved of suggestion. The reading of this frontispiece by its symbols, even with the imperfect ability of the author, is always a source of exquisite delight and unalloyed amazement. The representation is in a rectangular oblong of *two* squares. At the center of the top line there is located the triple circle, or three circles, one within the other, with an inclosed triangle. In the triangle is written the Great Name יהוה. Reference to this symbol, § 82, will show that it exhibits the *origin of measures*, in the form of the straight line *one*, of a denomination of 20612, the only numerical value of the perfect circle, the straight line being male and the circle female, as the י is male and the הוה is female ; which 20612 is the *Logos*, or *Dabvar*, or *Word*. The triangle and circles indicate the pyramid containing the use of the measures, with the three sets of circular elements necessary to the display of its various problems. This emblem is in an effulgence of light, above the brightness of the sun, and the *One* of the word is the holy 10, and circumference to 318, the Gnostic value of Christ, whence this spiritual effulgence. From this upper essence of effulgence, a strong bar of light descends obliquely to the foot of the oblong. On the one side of

this all is darkness, and chaos, and confusion, containing
darkness, and dragons, and all deeps.   It is the *female* or
sin side.   At the foot of the oblong is a pavement of squared
blocks, in cubes, alternating in black and white chequers,
indicating the female and male elements of construction;
and on the dark side, this pavement is not made, but is in
confusion.   At the foot, on the dark side, stands a little
cherub, striving to work out one of these pavement cubes
from a rough block or ashler, but without success.   He
stands holding his chisel and hammer in a helpless sort of
way, as if having a dim idea of what is wanted, but as
lacking in the requisite knowledge for elaboration.   The
other side of the bar of light is bathed in the essence of
wisdom and peace.   On this side the foot has a completed
pavement of the black and white chequers, of a general
oval, indicating the measure of the surface of the earth.
Just opposite the discontented cherub is seated another, but
on the light side.   He is looking with a pleased expression
at his brother in the obscurity.   His right arm is raised,
and he is pointing with his *forefinger*, the rest of his hand
being closed, aloft up the bar of light to its source.   This
forefinger thus pointing is the symbol of the Hebrew jod, ',
or Jehovah, or·the number 10, whose origin is in the male-
female word יהוה, significant of the same number as em-
anating from the deity name in the triangle above.   His
left arm is thrown over as embracing two parallel upright
bars, inclosing a circle, denoting the circle in the square,
the measures of which have been revealed to man from
above.   The parallel bars are supported on a cube, which
is one of the cubes of the pavement raised out of its place
to the level of the floor, and the upright bars are but the
extension of the sides of the cube.   This is the cubical
stone, and the square of the bars is 6561, and the value of
the circle is 5153.   The reading is instruction on the part
of the enlightened cherub to his brother, telling him that
from the geometrical elements, with the *least one* of a de-
nomination of 20612, located aloft, as the *law of the Deity*,
the measures of work have been revealed to man, and are

under his control, as exhibited in the circle, the square, and the cube; that with these measures the cubical blocks measuring the earth are to be formed. In this is the lesson. The oblong then contains the sun and the moon and the stars, as further being measurable by man through this knowledge. In the center of the piece there flies, or hovers, a female, as the *genius* of the whole. Her badge is on her forehead, and it is the *pentapla*, or five rayed star, denoting, as shown above, *the pyramid* as the containment of all measures. The moon, with the seven planets, represent the Garden of Eden woman, while the sun denotes the issuance of lunar measures in terms of solar.

All this condition of things goes to show that the mystery held, as not to be thrown open to the people, but to be retained as the property of a class, and a caste, in the more ancient days, may never have passed away; but, to the contrary, may exist even to-day, dominating the souls of men, women, and children, by keeping them in perpetual ignorance, and in religions feeding them on the worn-out husks of faith, without any relief, by way of setting forth actual connections between man and the Deity.

The Province of Ritualism.

§ 100. How plainly can now be seen the origin or source and reason of *ritualism*. Ritualism was not an empty thing. The adoration of the Deity was simply a constant reminder of man's dependence upon, connection with, and knowledge of Him. The worship, then, was the expression under this or that form, by gesture, action, signs, voice, dress, accompanied by visible symbols of some one or more of the exact mathematical formulations, or geometrical formulations, or numerical combinations, pertaining to the known method of measuring the works of the Deity. A conclusion of Sir William Drummond in Œdipus Judaicus indirectly favors this view : " The priests of Egypt and of Chaldea," he says, " had made a progress in the science of astronomy, which will be found more astonishing

the more it is examined. Their cycles were calculated with extraordinary precision, and their knowledge of the most important parts of astronomy must appear evident to all who candidly consider the question. But the people appear to have been purposely left in gross ignorance on this subject. Their vague and their rural years were neither of them correct. The festivals were fixed according to calendars made for the people, and the religious institutions were only calculated to confirm the errors of the ignorant, *The truths of science were the arcana of the priests"* because they were the sources of religious *cultus.*

Thus ritualism was an intelligible rite, one to be understood in all its parts and ramifications; one in which there was no possible deception as to the use of a symbol, to those who *could read the symbol.* No danger then, or at that time, of paying a worship to the thing. A carpenter might as easily be taught to fall down before his drawknife or plane as a *religious* before the instruments by which he copied the sums of his Father in heaven. Intrinsically, one would be as silly and fruitless of good results as the other. It has been the gradual and finally almost perfect extinguishment of the knowledge of the origin of ritualism on the part of the *priests themselves* that has entailed a superstitious use on the part of the laity.

Ritualistic Symbols.

(*a.*) One of the most prized retentions among the Jews of religious symbols are the *T'phillin.* They stood in place of the *cross* and *rosary* of the Christians. They are, in fact, but the means of exhibition of geometrical and numerical qualities for setting forth the substance of Elohim, Shaddai, or Jehovah, in His *law* of working. One of them consists of a flat square to be placed on the forehead; on this is a cube, lined or divided off into four divisions. It is the Adam or Garden of Eden square, as shown. On one side of this cube is the letter ‏ש‎, with three prongs; on the other, the same letter, with four prongs, the 3 and 4 of the golden candlestick, of the cross, and of the Parker

problem; which, as $4^2 = 16 \div 3^2 = 9 = 1777.77+ =$ the pyramid base, as to its circumference, in cubits. This square is fastened upon the head by a band permanently tied behind by a square knot, presenting on its face a square face of a cube divided into four parts, as noting the 8 small cubes, necessarily going to make up a next larger one. This band around the *head* is the circle pertaining to the square and cube, with the quality of *man* contained as 113, the circle being the counterpart 311. The other is a similar square, with a simple cube, without letters. This is to be fastened on *the left* and bared arm, the cube being adjusted over the heart; then the band fastening it is wound 7 times around the lower or *fore-arm*, to the hand, where it is so interlaced in the fingers of the hand as to form the letter ש, or Shaddai.

As simple as this contrivance is, it contains the elements of a pure geometrical and numerical system, with its application as a system of measures to cosmical or God uses. The *fore-arm* was esteemed to be the cubit value, or *Ammau*— that is, "*mother of measures;*" and, as shown, the cubit indicates the Parker value 20612, source of the *Dābvar* or Word. The wrapping 7 times around the left arm was most likely the serpent of the Garden, which, as the letter ט (the snake), was numerically the number 9, the intertwined numbers of the tree of the Garden as עץ, or 7 and 9 (for character values). The noose around the arm, or the upper part of the fore-arm, represented the mouth of the serpent, or door of Indranee, or the womb of time. The word Shaddai is, numerically, either by adding the letter values, simply 314, or a circumference to a diameter of *one*, or else by adding the letters (the *d*, because of *dagesh*, being doubled) 318, or a diameter to a circumference of *one;* or, by giving the character values as the letters run, 381, or the half base side of the pyramid (the *d* doubled by *dagesh*). The numbers 7 and 9 intertwined are 63, or counterparted 36—63, which are of Garden of Eden use.

(*b.*) Again, as to the *cross* and *rosary*, at the same time

the plainest, simplest, and most embracing of all symbols. The cross is the symbol of the unfolding of the cube, which represented the perfect circle 20612 taken off on to its 12 edges, the *man* on it representing the 113 : 355, or Metius form. The *rosary* is a string of bunches of beads. There are five bunches of *ten* beads each, making 50, which is the letter הׂ, or 5 raised to the letter נ, *nun*, or *fish*, or הוה, or *Eva*. Between each bunch there is a larger bead; of these there are 5, which is the letter הׂ, or the productive womb-letter of the Hebrews. These 55 beads close the circle as the distinctively feminine part. But the circle is only looped together at this point; for the string of beads is continued, and next comes a bunch of *three* beads, as by themselves, then a large bead; and then the string is terminated by the cross with the man on it. The 3, and then 55, are 355. Prefix the one bead, or read in their order of bunching together, and we have 1355. Bend this into the form of a circle, and we have

$$5 \quad 5$$
$$3 \quad 1$$

or 5135, or *the woman*. Place the Hebrew letters, and add them, and there results 311, or counterparted 311—113, the man-woman number. Read the other way, and there results 5153, or the Parker circle inscribed in the square of 6561, as to which $5153 \times 4 = 20612$, is the *Dabvar* or *Word* number. In short, the *rosary and cross*, simply in this form, represents the deepest underlying reading of the Garden of Eden, and thus is the correct representative symbol of the entire Old Testament *ritual* and *knowledge*. This simply shows that to attack the ritual of the Roman Church to the extent of this possession is simply to attack the Bible itself.

How desperately blinding becomes a superstitious use, through ignorance of such emblems, when they are made to possess the power of bloodshed and torture, through orders of propaganda of any species of religious cultus. When one thinks of the horrors of a *Moloch*, or *Baal*, or *Dagon* worship; of the correlated blood deluges under

the cross baptized in gore by Constantine, as the initiative
of the secular church; of Jewish faith and constancy,
amidst all suffering, the dearest treasure left by way of
symbol being the *t'phillin;*—when one thinks of all this,
and then that the cause of all has been simply ignorance
of the real radical reading of the *Moloch*, and *Baal*, and
Dagon, and the *cross*, and the *t'phillin*, all running back
to a common origin, and, after all, being nothing more
than a display of pure and natural mathematics, although
and albeit of a Divine foundation, and of Deity *creative
use*, one is apt to feel like cursing ignorance, and to lose
confidence in what are called *intuitions* of religion : one
is apt to wish for a return of the day when all the world
was of one *lip* and of one *knowledge*.

The exhibition of facts, and the explanation of their cor-
relative uses, in this work, is finished.   The author believes
it to be shown that the elements of construction of the pyr-
amid, and their use, agreeably to the intention of the ar-
chitect, have been proved, and that these are shown to be
used as the foundation of the Bible structure from the first
chapter of Genesis to the closing scenes of the New Tes-
tament.   But while these elements are rational and scien-
tific, and in the Bible rationally and scientifically used, let
no man consider that with this discovery comes a cutting
off of the *spirituality* of the Bible intention, or of man's
relation to this spiritual foundation.   Does one wish to
build a house?   No house was ever actually built with tangi-
ble material *until first the architectural design of building
had been accomplished*, no matter whether the structure was
palace or hovel.   So with these elements and numbers.
They are not of man, nor are they of his invention.   They
have been revealed to him to the extent of his ability to
realize a system, which is *the creative system* of the eternal
God ; open at all times to man for his advance into its
knowledge, just in the measure of his application and
brain ability ; free to all as is the water we drink and the
air we breathe.   But, *spiritually*, to man the value of this

matter is, that he can actually, in contemplation, bridge over all material construction of the cosmos, and pass into the very *thought* and *mind* of God, to the extent of recognizing this *system of design* for cosmic creation—yea, even before the words went forth, *Let there be!* It is the realization of the existence and *mental workings* of the Divine mind, by means of the little primal cube and its circle, which to us are tangible realities, that goes to prove to man that his soul lives, and will continue to live ; and thus he may take little heed for his body, which is, however, exquisitely constructed, but a mask, dulling the finer powers of his mental whole. The author has set out to find the truth. To the extent of his ability, let him state his results. The best and most authentic vehicle of communication from God to man, though many exist, is to be found in the Hebrew Bible, the preservation of which, in its exactitudes, can only be ascribed to a spiritual supervision. But the value of this would have been lost had it not been for a like preservation of a real monument of the practical application of the Bible secret. This monument stands to-day on the banks of the Nile. But, by turn, this also would have been useless to man had there not been *a preservation* of the actual primal measure, which has been shown to be the *British inch.* Through the lapse of ages this has been preserved to exactly fit to the solution of the whole. None but a spiritual power could so have preserved all these *means* of restoration of the ancient (and eternal) wisdom. The use of the Biblical method of display of the Divine cosmogony is to be found pure and truthful in some of the grandest *ritual* features of the Roman Catholic Church. There is no gainsaying it, for it is so. That church uses a ritualistic symbolization, in which the idea of life and the progression of life predominates; while, however, it has been, and is, perhaps, in possession of the more radical methods of display. On the other hand, Free Masonry holds to the elemental working by *geometrical* display—i. e., by the *harder, more exact,* and *purer*

outlines of the same system of problems.   As between the
two systems, *in their ultimate, there is no difference at all.*
Lord God of a common humanity! loosen the shackles
from the bodies and enlarge the souls of men.   Let free-
dom be the seed, and let wisdom, love, peace—but, above
and before all, *charity*—be the harvest.   And

SO MOTE IT BE.

ADDENDA.

(*A.*) (1.) There is a value produced so beautifully, and yet so curiously, that it is well worthy of mention. In § 82, on page 155, the elements of three circles are given as springing one out of the other. Of these, as to (3.) its height is to its $\frac{1}{2}$ base side (full base side being 486, the standard height of the pyramid) as 309.3970502+ : 243 feet, and its $\frac{1}{2}$ base diagonal is 343.653895+ feet, or 4123.846740+ inches. The mode of procuring this $\frac{1}{2}$ base diagonal is $\frac{1}{2} \sqrt{486^2 \times 2} = 343.653895+$, and this multiplied by 12 = 4123.846740+ inches. *It is seen that these elements are derived from the mass measures of the pyramid, which are derived directly from the Parker forms.*

The length of the king's chamber is *standard* 4122.4, and enlarged 4125.29396 *tenths* of inches. Take these as the extremes to find a *mean proportional*, and we have 4122.4 $\times$ 4125.29396+ = 17006111S2074+, and the square root of this quotient is the *mean proportional required*, or 4123.8467+.

So it is seen that the $\frac{1}{2}$ base diagonal of pyramid elements No. 3, derived from the mass of the pyramid, as shown, is the *mean proportional* between the standard and enlarged lengths of the king's chamber ; a most magnificent result, as showing the architectural design, one may say, *beyond question.* This $\frac{1}{2}$ base diagonal value is exceedingly close on to the radius value of the circle in which these relations are shown, for that radius is the $\frac{1}{2}$ of the sum of the extremes, and the $\frac{1}{2}$ of 4122.4 + 4125.29396+ = 4123.84698+.

Take the diagram, page 138, and while it gives the general base of values for the interior works of the pyramid, it is also the form for exhibition of the two lengths of the king's chamber ; for

A D becomes 412.529396+, D B becomes 412.24, and C D becomes
the *mean proportional* between these extremes of 412.38467 ; all
to a radius of the circle 412.384698+. The wonderful value of
circular elements No. 3, as connecting the mass of the pyramid
with the interior construction, is thus clearly unfolded ; and it
becomes plain why, around these circular elements, in 4th Gen-
esis, it is found that so many of the prominent Biblical names
(*for numbers*) concentrate.

(2.)   Another, but symbolic or sympathetic harmony, can be
shown.   The uses of the pyramid measures, for one purpose, are
evidently astronomical ; and while the symbolization of the *origin*
of measures, as the *primal one*, or *cube*, as relates to pyramid
construction, is set forth in the *triple* circle inclosing the pyramid
and the *great name*, this great name for one meaning is also that
of the *perfect one*, pictured as a *circle, with a diameter* drawn
through it, *as the year circle*.   But this year circle had *three
values*, as 355, 360, 365 ; wherefore this symbol may be taken
also as expressive of these *three* year-circles, containing, as they
do, the *Word;* which *Word* is expressive of the year circle, and
is *productive of all things.*   In these connections, it is well
enough to remark that the letter form יְהוָה was held as unpro-
nounceable, *because it was in fact no word to pronounce*, its
meanings being held in symbols.

(*B.*)   It is seen that there is in the Hebrew Bible a combina-
tion of the pyramid *measure* elements with *phallic* forms and
uses, under the guise of the *man-woman.*   Is not this combina-
tion expressed by the *Sphinx located at the base of the pyra-
mid?*   The author has seen it somewhere stated, as a reproach
of obscenity against the ancient Egyptians, that the head of
the Sphinx is disfigured by its locks of hair being composed of
phallic signs.   May it not be that the Sphinx was connected with
the pyramid as part of its reading?   And may it not be barely
possible that there is some *passage-way* connecting the Sphinx
with the interior of the pyramid?   (Suggested by a friend.)

(*C.*)   The *Adam*, or 144, relation is the *fundamental* one,
carrying the pyramid relations into the Bible ; and it can be used
by scale, for different proportions, and is susceptible of any kind
of scale divisions or subdivisions ; for instance, under the devel-
oping form of *Arets, Earth*, or 12, it is 12², or 144, giving an
area value, which can be extended by use of the factor 6 to a
larger form, while as 144 it may be used as *a line on which a
square is to be raised*, as 144².   This, as inches, gives a value

of 12 *in feet*, whereby the word *Arets*, *earth*, or 12, may be taken as the Adam form reduced to *feet*. But as 144², or a square of 144 to the edge as a center square, then this enlarged to *four squares* of 144 to the edge, each, gives a larger square of 144 × 2 = 288 to the side, or 288 × 4 = 1152 (or the letters INRI, *as numbers* 1521, *read in a circle*, or where the 144² (the interior square) is subdivided into four parts, and these letters are placed, consecutively, 1 in each small square (materially reading as *earth*, *air*, *fire*, and *water*, the containment of the *universe*), these can be read as

$$1 \quad 5$$
$$1 \quad 2$$

or 1152), the circumference of the larger square. But *in inches* 288 ÷ 12 = 24 *feet*, and this represents *the side of base of the pyramid*, for *its* measure is diameter to a circumference of 2400 (or 24) *feet*. In this connection it is observable that the *man-cross* and *triple-circle Jehovah* symbols are essentially the same.

(*D.*) It is altogether probable that the key power of *heraldric display* is but a part of, and a vestige of this ancient system of esoterism.

(*E.*) The *three mountains in one* to the top of which Moses was sent up, was in the plains of *Moab;* and *Moab* may be taken as a *sheet* or *plain of water*. The narrative description may be changed to a magnificent picture. The lower mountain of the three was *Ibarim*, or *Hebrews*, or *heaven dividers*, or *division of the heavens*, and can be taken as the subdivided circle of 360 *degrees*. The equivalent of this circle laying, as the base of Mt. Ibarim, on the *face of the waters*, or shimmering sea, may be had as *a square*, or as a *floating ark*. Over this let the *brilliant arch of the sun* be bent as *a bow*, which is Mt. Nebo, as including the *wisdom behind the sun;* and let this be drawn as the *rainbow*, showing the *seven* primary colors. It was on the summit of this that Moses went up onto the *reviewing .point*, or onto Mt. Pisgah. He may be taken as *Enosh*, or 365 — 1 = 364, or *Son of Man*, or, again, as the *Holy Spirit of Wisdom* under the *form of a Dove* (used in the flood picture as 355 ÷ 5 = 71): This is a second termination of measures, or power of measuring, and is marked by the recurrence of the *ark floating upon the waters*.

(*F.*) Let no man suffer himself, for a moment even, to think that the correlative likeness of the Son of God, the *man-fire*, *Jes-us*, to the sun in the heavens, as embracing it, is in any wise

a disparagement to the Holy Scriptures. A subtle force of *life* is traceable through grosser material forms, in what we call the phenomenon of *motion*, which becomes manifested in the appearance of *fire;* and this includes what we call *electricity, magnetism, mesmerism,* and further back a power of *spiritualism.* The fire of the sun is a part of the source of *spiritual* life as well as of the life given to what presents itself to us as *material.* But it is the *antagonism* between *cold* and *fire* (or *darkness* and *light*), through which the phenomena of the *modification of motion,* or of *life,* manifest themselves. Take the earth as situated at a certain fixed *mean* limit from the sun, where it is balanced between the effects of *cold* and *heat.* Circular motion on its axis *once imparted* to the mass, by reason of the alternating effects of *cold* and *heat* on this mass, not only will revolution on its axis continue as a *mechanical* result, but the pathway of the earth in its orbit around the sun, will also result as a concomitant effect; and this will (between certain extreme limits) be utilized cosmically by more subtle *mechanical* causes to other cosmical effects.   (See Force in Nature, Section IX.)

SUPPLEMENT

TO

SOURCE OF MEASURES.

SECTION I.

MEASURES.

The Egyptians, Hebrews, Romans, and probably the Hindoos, were indebted for their linear measures to one particular measure which, as can be shown, has come down through the ages unimpaired, viz.,

The British inch.

This measure had its inception in the numerical *integral* relation of

Diameter to *circumference* of a circle.

The area of a square of 81 to the side being 6561, the area of the circle inscribed in that square is 5153; and by a simple geometrical truism the *diameter* of a circle being taken as 6561, its *circumference* will be 5153 × 4 = 20612.

All these measures were derived from this formula 6561 : 20612; as to which the geometrical relation of *diameter* to *circumference* is an obedience.

In practical application of these numbers on a measuring stick or rod, they were attached to that actual measure which to-day is styled the *British inch;* proved by the standard yard measure

(3)

constructed by Captain Kater, in the year 1824, from the British
standard, and presented by the British government to the magis-
trates of Edinburgh. (Life and Works at the Great Pyramid,
by Piazzi Smythe.)

The reason why the value of the British inch is as it is, is be-
cause it was just that value which, on application, would make
material cosmic magnitudes correlate with the times and distances
of the planets of the solar system, under a law of construction
which, by the ancients, was esteemed to be, and doubtless was,
divine.

The best restorations of the ancient Egyptian *cubit* value were
those made by Sir Isaac Newton, from many measures taken of
the works of the great pyramid of Egypt by Professor Greaves,
of Oxford, England, and those made by the *savans* of the French
expedition in Egypt, from a great number of measures taken of
the rooms and passage-ways, as to their heights, lengths, and
widths of the catacombs of Osimandya.

Sir Isaac Newton (Smythe's Life and Works) found this re-
stored value, in terms of the British foot to be

$$1.717 \text{ feet.}$$

The French found it to be, in terms of the French *meter*,

$$.523524 \text{ meter.}$$

The *meter* being 39.37079+ British inches, then .523524 × 39.-
37079+ = 20.$\dfrac{611553+}{}$ inches, which, divided by 12, gives its
value in British feet, as

$$1.717629+ \text{ feet.}$$

Take the above mentioned circumference value as 20612 *inches*.
Divide it by 12000, and there results, in terms of British feet,

$$1.717666+ \text{ feet :}$$

and this shows the origin of the *ancient cubit* value as derived
(in this form of 20612) from British inches.

If, however, we take the form

$$\left. \begin{array}{c} 20612 \\ 6561 \end{array} \right\} \times \frac{16}{9} = \begin{array}{c} 36643.55+ \\ 11664. \end{array}$$

and divide this raised diameter value by 1000, there results:

$$11.\frac{664}{}$$

By the very best restorations of the *Roman foot* (see as to the value of the Roman foot, in terms of British measures, "Great Pyramid," page 25, by Rev. John Taylor) its value proves to be in British inches,

$$11.\frac{664}{}\ inches;$$

showing a common origin.

The British foot of 12 inches was evidently taken as the rectification of a *circumference* value in terms of the above formula, of 12 to a *diameter* of 3.819716+ feet.

We have then—

Diameter 6561; *circumference* 20612.

$\frac{20612}{1000}$ British inches, or 20.$\frac{612}{}$ British inches,

$$= 1\ cubit.$$

$\frac{6561 \times 16}{9000}$ inches $= 11.\frac{664}{}$ inches,

$$= 1\ Roman\ foot.$$

12 inches *circumference* to 3.$\frac{819716+}{}$ inches *diameter*,

$$= 1\ British\ foot.$$

SECTION II.

ARCHITECTURAL DETAILS OF MEASURES OF THE INTERIOR OF THE
GREAT PYRAMID OF EGYPT, IN TERMS OF THE MEASURES ESTAB-
LISHED IN SECTION I.

The forms (of *circumference* to *diameter* of a circle), viz :

$$20612 : 6561,$$

utilized in value as British inches, were the basic measures used
to construct this pyramid in all its parts.   Take the forms,

$$20612 \text{ is to } 6561$$

$$\text{as } 64800 \text{ is to } 20626.\underline{47001+}$$

as *inches*.   Divide by 1000, and there results :

(1.) $20.\underline{\dfrac{612}{}}$ is to $6.\underline{\dfrac{561}{}}$

(2.) as $64.\underline{\dfrac{800}{}}$ is to $20.\underline{\dfrac{62647001+}{}}$

where (1.), $20.\underline{\dfrac{612}{}}$ inches is the *cubit* value, as a *circumference*,
and in (2.), it is seen that a *diameter* value of $20.\underline{\dfrac{62647+}{}}$ inches,
approximates very closely to it.   Upon these two forms depended
the entire construction of the pyramid, in measures of inches,
feet, yards, cubits, miles; of days, weeks, months; of periods
of the moon and of the earth; of the size of the moon and of
the earth, with the distance to the sun, as springing from them.

To more fully appreciate the following details, which are to
some extent supplementary (especially as to interpretation of use
of lines), reference is made to Source of Measures, by the au-
thor.   This is simply a development from the grounds and meas-
ures there laid down.

The *height* of pyramid to twice its *base-side* has the propor-
tion of *diameter* to *circumference* of a circle. $20626.\underline{47001+}$

(variation on 20612), as *feet* divided by $27 = 763.943333980+$ feet, is the length of side of base. This is the same as $20626.\dfrac{47+}{}$ $\times \dfrac{16}{9} = 36669.\dfrac{280031+}{}$ inches, equals the entire circumference of the base of the pyramid; or for the base side in feet 763.- $943333980+$ feet. The height, therefore, was $486.\dfrac{341+}{}$ feet. As to the pyramid being truncated, see Appendix.

The interior works were referable to the slope line of the exterior, to the base, and to the vertical axial line, or center line, of the mass; therefore, the diagram, annexed hereto, exhibiting in vertical section the half of the structure, is sufficient for lengths and heights.

The entrance passage as to the center of its floor, longitudinally was set off a distance to the eastward of the center of the base side, $24.\dfrac{42190+}{}$ feet, for reasons given in section 7, Source of Measures—a token of the geometrical origin of the shape of the entire mass.

The passage-ways, as to their dimensions, are constructed, it would seem, on *mean* measures, affording a very small, limited variation of values, running to extremes on a *mean*. This is true also, notably, of the queen's chamber, whose angles at the corners, as shown by Piazzi Smythe, are not right angles. The lengths of the passage-ways afford also a margin (very small indeed) over and above a *mean* of length. Within the limits of these extremes, by very nice adjustment, a very great number of comparative and correlating measures were obtainable. Example: $206.\dfrac{12}{}$ inches equal 10 cubits, whereas $206.\dfrac{2647}{}$ inches denote a *diameter* to a *circumference* of 648. This might be in a scale of feet for inches, though as a fact the margin of difference would then be larger than is the fact. The margin in inches may appear in tenths, but in feet it would likely appear in hundredths, or perhaps thousandths. This feature of pyramid

construction is shown by the measures of Piazzi Smythe, which, it may be said, are throughout most remarkable for their exactitude.

SPECIFICATIONS.

(1.) The pyramid is based on a pavement which is included in the mass of the structure. Its thickness is $20.\dfrac{612}{}$ inches, or one cubit, or $1.\dfrac{7176+}{}$ feet.

This is a *circumference* to a *diameter* of $6.\dfrac{561}{}$ inches.

(2.) Line $a\,a^1$ is the one-half base side of pyramid, and equals in length $20626.\dfrac{47001+}{12}$ inches $\times \dfrac{16}{72}$ equals 381.971666990 feet.

or $111.\dfrac{11111+}{}$ cubits, or $4583.660003880+$ inches. Actual measure by Howard Vyse, $382.$ feet; difference $.02$ of a foot.

NOTE. $381.\dfrac{971+}{} \times \dfrac{18}{200}$ equals the length of the king's chamber in feet. Also this distance is *diameter* to a *circumference* of 1200 feet, or 14400 inches, or area of one square foot multiplied by 100; or, as minutes, it equals 10 days in time measure.

(3.) Line $a^2\,c$ is the vertical height, above the base of the pyramid, of the point of intersection of the floor line of the descending passage-way with slope line of the structure. Its length is 31 cubits, or $20.\dfrac{612}{} \times 31 = 638.\dfrac{972}{}$ inches, equal to $53.\dfrac{2476+}{}$ feet. The same measure computed by Howard Vyse, 53.1975 feet (Source of Measures, p. 119). The line $a\,c$ to the foot of this line is $41.820641111+$ feet, or $501.84769333+$ inches. These lines are in the following proportions to each other: $a^2c : a\,c ::$ $6561 : 5153$, or as the area of the square of 81 is to that of its inscribed circle. In the scale of inches for feet, they very nearly represent the relation of *vertical* height of descending passage-

way to its breadth, so much so as to proportion, that these given, viz., 6561 : 5153, may be taken as a guide for the dimensions of that passage.

NOTE. The height values of the descending passage-way as taken (7.), are height vertical to horizon 52.7895656+ inches, and the perpendicular to the incline of the passage 47.25419656+ inches. By using the proportion given, to find the breadth we have 6561 : 5153 : 52.7895+ : 41.-460849+ inches for breadth of passage; or, for dimensions of descending passage-way we have—

Height vertical,	52.7895656+	inches.
" perpendicular to incline,	47.25419656+	"
Breadth,	41.460849+	"

The dimensions of this passage-way may show a change of values on these, by the biased construction of its sides, and top and bottom, of:

(*a.*) For vertical height take $\dfrac{318309722}{6} = 53.051620+$ (where 31.8309722 is diameter to a circumference of 100): then we will have as a variation—

Height vertical,	53.051620	inches.
" perpendicular to incline.	47.488772+	"
Breadth,	41.666666+	"

(*b.*) For vertical height take $\dfrac{314.159426}{6} = 52.359904+$ (where 314.159426 is *circumference* to a *diameter* of 100): then we will have as a variation—

Height vertical,	52.359904+	inches.
" perpendicular to incline,	46.8695884+	"
Breadth,	41,1233939+	"

Suppose the arithmetical *mean* of (*a.*) and (*b.*) is used, as—

Height vertical,	52.70576+	inches.
" perpendicular to incline,	47.17918+	"
Breadth,	41.39502+	"

now the measures of Piazzi Smythe show a much greater limit of accommodation than here required.

The line $a^4\ a^5$ is shown to be (8.), 251.71412+ feet; or, numerically, the square root of *one mile* in inches. $\sqrt{251.71412+} = 501.7111953$, and this is a very slight variation on the value $a\ c$, or 501.8476+ inches. So, also, the line $t^1\ d$, see diagram of part of descending passage-way, is 14.842233+ inches; this divided by 12 = 1.23685+ feet; showing a very close agreement with the floor line of the ascending passage-way, proportionally, that line being 123.6830+ feet.

(4.) Line $a^2 a^3$ is the *floor* line of the descending passage-way, and is 20.$\dfrac{62647001+}{}$ inches × 200, equal to 4125.294003493+ inches, or 343.774500291+ feet. Same measure by Howard Vyse "about 4126" inches.

NOTE. This, as seen, is a *diameter* line, and gives a *circumference* of 1080 feet, or 12960 inches, or 10 times *one square yard*, or $\dfrac{1}{400}$ of one solar day.

The length of this line is 10 times the length of the king's chamber. The line $d\,b^1$ equals 100 feet, or 1200 inches. Compare with (2.) "Note."

(5.) Line $a^3\,c^3$ is the distance from the floor line of the descending passage-way to the vertical axial line of the pyramid. Its length is 32.4237769849+ feet, or 3890.853238188+ inches, or 18.87664+ cubits.

NOTE. Though this distance may be relied on as architecturally correct, no interpretation can be given of the line. As a whole, it is cut by the wall of the subterranean chamber.

(6.) The key to the works above the descending passage-way rests in the value of the line $b\,d$, or on the perpendicular let fall from the roof line on to the floor of the horizontal passage-way. The line $a^3\,b$ is parallel to the exterior slope line of the structure.

The length of this line $b\,d$ is 3.16227766+ feet, or 37.94733192+ inches.

NOTE. The interpretation of this line is very remarkable. Form of *circumference* to *diameter* is 20612 : 6561 as said.

Circumference to a *diameter* of 1 foot, is 3.141594269+ feet. *Diameter* to a *circumference* of 10 feet, is 3.1830972249+ feet.

The *mean proportional* between these values is (as stated),

3.16227766+ feet.

Now this last value is the *square root* of 10 : in inches, as 37.94733192+, it is the *square root* of

1440 *inches.*

The half base side of the pyramid (2.), is seen to be a *diameter* to a *circumference* of

14400 inches.

Thus the relation becomes manifest. But as the half base side

equals $\frac{200}{18}$ of the length of the king's chamber, connection with

that is shown. And as the length of the descending passage-way is shown (4.) to be 10 times the length of the king's chamber, connection with that is shown. Therefore all of them are connected with the square of 12 inches, or 144, both as a linear measure and a measure of time, because 1440 is the minutes in 24 hours. For an immediate check upon this value, the dimensions of the descending passage-way are now given.

(7.) From the data in (6.) the height of the descending passageway, *perpendicular to its incline*, will be

47.25419656+ inches.

Piazzi Smythe's measure of the same, as per his tables of actual measure,

47.24 inches.

Difference :

.014 of an inch.

Its vertical height will be

52.78956568+ inches.

NOTE. At the foot of the descending passage-way in actual construction, as per Howard Vyse, the mason work is set back and down as indicated by the dotted lines (also see Perring's Plates), so that the actual vertical height of the passage to the subterranean chamber is contracted or reduced from the descending passage way, to

3 feet,

or

36 inches;

which accords again with contents of note to (6.), because 36

inches is 1 *yard.* Its area is 36^2 or 1296 inches, and $1296 \times 4 =$ 5184, the $\frac{1}{1000}$ of 1 solar day; thus making the yard *numerically* a base for the correlation of distance and time measures.

(8.) The line $a^4\ a^5$, extending from the intersection of the roof line of the descending, with the floor line of the ascending passage-way to the vertical axial line of the pyramid, is the base line of construction of all the upper works.

Its value is

$$251.714123560+ \text{ feet},$$

or

$$3020.5694827+ \text{ inches}.$$

NOTE. The interpretation of this line is, that it is the *square root* of

$$63360,$$

which, *as inches* (by scale), is just the value of *one mile* in British measure, or

$$5280 \text{ feet}.$$

So that, all the upper works embraced between the lines $a^4\ a^5$ and the vertical axial line of the pyramid, viz., $a^1\ a^8$, are included in a square area denoting 1 *mile British.* As a check on this line, Howard Vyse gives the line $a^4\ b$ as 247.7 feet. It is 247.75265939+ feet. Difference .05 of a foot. But the accuracy of this line is checked back, again and again, by the coming together of all the lines of the upper works.

(9.) The consideration of the contents of (8.), leads first to the measure of the line $a^1\ a^8$. This line is in length

$$137.5098001164+ \text{ feet},$$

or

$$1650.1176013968+ \text{ inches}.$$

NOTE. This line is 4 times the length of the king's chamber. Its main interpretation is, that as *inches* it is a *diameter* to a *circumference* of 5184 inches, or the number of inches in 4 *square yards*, or the exact value of the $\frac{1}{1000}$ of one solar day in *thirds.*

The connection between this line and $a^4\ a^5$, noted in (8.), is re-

markable. The extremes of the British long measures are the *inch* and the *mile*, or, say, the cubic foot of 12 inches, and the cubic mile. Then 12^3 and 5280^3 represent these extremes. Performing the operation we have

$$1728 \text{ and } 147197952000.$$

Dividing the one by the other, we have a quotient of

$$85184000.$$

Dividing by 80000000, and we have a quotient of 1, with a remainder over of

$$5184000,$$

which, as *thirds*, is just *one solar day*. That this value thus found was used for this showing, to connect the line $a^4 \; a^5$, with $a^1 \; a^8$, which last as seen is a *diameter* to a *circumference* of 5184, seems positively to have been the case to the author. It does not seem that by the system of the ancients, our method of multiplication and division was used, but rather addition and subtraction. In this view, having the value $5280^3 \div 12^3$ as seen, the use would have been

$$85184000$$
$$\text{less } 80000000$$
$$\overline{} \cdot$$

Remainder, 5184000

or 1 solar day value thus arising. Their method of use is yet to be discovered; but an example of a like use to get the value of a line is shown in (10.).

Of this line, for verification, reference is made to Source of Measures, where, not at that time being able to interpret any lines connected with the roof line of the ascending passage-way, but simply working with the forms 20612 and $20626.\dfrac{47+}{}$ as nearly in harmony with the found measures as possible, making a positively dependent use of Piazzi Smythe's measures as regards that roof line and the upper works, the author arrived at the determination of this line to within so small an amount, viz., .0095 of a foot (see page 136), that he at once accepted of this value as without doubt, the true one. No attempt was there made at in-

termediate exactitudes, from inability at that time to interpret any meanings of lines which would serve as a guide to work back and forth, checking results by the harmonies of relations.

(10.) The line $a^6\, d^1$, embraced between the north wall of the grand gallery and the north wall of the queen's chamber, comes next in order. Add to itself, as inches, the ⅓ of 206.12; or, 206.12 + 103.06 = 309.18. Add to itself, as inches, the ⅓ of 206.$\dfrac{2647001+}{}$; or, 206.$\dfrac{2647001+}{}$ +103.$\dfrac{1323500}{}$=309.$\dfrac{3970501+}{}$ inches. Subtract one sum for the other, or,

$$309.\frac{3970501+}{} - 309.\frac{18}{} = .2170501 \text{ of an inch.}$$

Raise this by 1000 times, it equals

217.0501 inches.

Multiply this product by 7, or,

217.0501 × 7 = 1519.3507 inches.

This is the measure of the line $a^6\, d^1$: and it is very observable as being a difference founded on 10 cubits and its enlargement, or the difference between the width, north and south, of the queen's chamber, to which the line leads, which is 10 cubits, and the width, north and south, of the king's chamber, which is the enlargement on 10 cubits (206.$\dfrac{12}{}$ inches), or 206.$\dfrac{2647001}{}$ inches.

Piazzi Smythe's measure of this line is 1519.4 inches; difference, .0493 of an inch. As another verification of this use, he found that the line was a multiple of 217 by 7.

(11.) The line $d^1\, a^1$, or the width of the queen's chamber, north and south, is

$$206.\frac{12}{} \text{ inches,}$$

or, 10 cubits.

Piazzi Smythe gives for this measure, four measures; two taken on the east side of the room, and two on the west side; taken at two separate times. East side, 204.7, 206.5; west side, 206.3, 205.6. The taken measure, which is typical and in general harmony, will, however, verify itself as correct, But bear in

mind that this chamber affords extremes of measures taken on a mean.

(12.) The line a^6 a^8, being the floor line of the grand gallery, intersecting the vertical axial line of the pyramid at a^8, is

$$156.8744966+ \text{ feet.}$$

This measure is

$$91.\frac{33}{} \text{ cubits.}$$

Piazzi Smythe gives this line as 156.9 feet: difference, .025 of a foot.

(13.) Having this line with a^6 d^1 and d^1 a^7, as given in (10.) and (11.), we can determine the line c^2 a^8: and also, which is a matter of the greatest moment, where the vertical axial line of the pyramid cuts the floor length (north and south) of the queen's chamber.

(1.) c^2 a^8 is found to be

$$69.48255243+ \text{ feet.}$$

(2.) It is found that the length c^2 a^7, of the floor line of the queen's chamber, lays to the *south* of the vertical axial line of the pyramid, and its value is found to be

$$3.14159426+ \text{ feet ;}$$

or, *circumferance* to a *diameter* of 1 foot; or, it is the circumference to a circle, *inclosed in the area of one square foot*, or 144 inches, or the $\frac{1}{10}$ part of one solar day in *minutes*, or the other extreme of the British measures from the line a^4 a^5, which, as seen, is the square root of one mile as 63360 inches.

(14.) We can now work back to ascertain the value of the line a^4 a^6, which is the length of the floor line of the ascending passage. From the above data, as ascertained, its value proves to be

$$123.68300698+ \text{ feet.}$$

Piazzi Smythe makes it

$$123.683 \text{ feet :}$$

difference, one may say, nothing. $20.612 \times 6 = 123.672$, show-

ing, in inches for feet, this value as modified on the typical form.
Or, also, $123.68300698+$ feet are $72.00+$ cubits.

(15.) Reverting now to the queen's chamber, $d^1 a^7$ equals
$206.\frac{12}{}$ inches, or $17.\frac{1766+}{}$ feet, or 10 cubits. $c^2 a^7$ equals
$3.14159426+$ feet, or $37.69913112+$ inches. Then $d^1 c^2$ must
equal

$$168.42086888+ \text{ inches.}$$

or

$$14.03507240+ \text{ feet.}$$

(1.) The part $d^1 c^2$, thus found, governs the *height* of the walls
of the room, as $d^1 d^2$ above (vertically) the point a^6, or the line
$a^6 a^7$; making this height, with the length $d^1 c^2$, *a perfect square.*
This height, therefore, is

$$168.42086888+ \text{ inches.}$$

$d^1 v$ to the floor is given by Piazzi Smythe as

$$14 \text{ inches.}$$

Sum,

$$182.42086888+ \text{ inches.}$$

Piazzi Smythe measured this full line as

$$182.4 \text{ inches:}$$

difference,

$$.02 \text{ of an inch.}$$

(2.) The value of the solar day, in *thirds*, is

$$5184000'''$$

The value of one sidereal day is

$$5169846'''$$

Take these values as represented by

$$5.\frac{184}{} \text{ feet,}$$

and

$$5.\frac{169846}{} \text{ feet,}$$

or, in *inches*,

$$62.208 \text{ inches,}$$

and

$$62.038152 \text{ inches.}$$

The line $m\ n$, or the height of the gable, is thought to rep-
resent either one or both of these values; if the latter, then by a

bias on the roof line of this gable.   Piazzi Smythe gives this
distance as

<div align="center">62. inches.</div>

But, by correcting his computed measure of the floor line as 205.8
to 206.12, his value would have been 62.2 inches.

There results therefore, for greatest height,   62.208 inches.

	168.420 "
	14. "

Sum,	244.628 inches.
or,	244.428 "
Piazzi Smythe makes the full height,	244.4 "

Difference,	.028 inches.

NOTE. (*a.*) Considering the location of the queen's chamber, in its *east
and west* length, with reference to the vertical axial line of the pyramid.   In
Source of Measures, page 126, it is stated that the center longitudinal line
of the floor of the descending passage-way is set off to the eastward of the
vertical axial line of the pyramid

<div align="center">24.42190 feet,</div>

or,   293.06280 inches.

Take now the length of the line a^4 a^5, or, 251.7141235+ feet, as *inches*,

<div align="center">251.7141235+ inches.</div>

Add a sidereal day as taken,	62.038152	"

Sum,	313.752275 inches.	
Deduct from above,	293.06280	"

Difference,	20.68947 inches.	

Which gives the ½ width of the passage-way to the queen's
   chamber.   Its full width would be   41.37894 inches.
Making use of a solar day, instead of a sidereal day, and
   this result would become   41.61864   "
The *mean* of these values is   41.4987   "
Piazzi Smythe's measure of the width of this particular
   passage-way, immediately at the door of the queen's
   chamber, is   41.46   "
Difference,   .04   "

(*b.*) Take the values found above of the distances from the center line of the pyramid to the east wall of the queen's chamber, made up (1.) by the mile value in inches with the value of a sidereal day in inches, viz.,

<div align="right">313.752275 inches.</div>

Divide by 2, and we have   156.876137   "

And this shows that the value of the floor line of the grand gallery, or the line a^6 a^8, which has been seen to be

<div align="center">156.87449 feet,</div>

has its origin here in this queen's chamber, as worked in a scale of inches for feet. The difference is .0016 inch.

We must not lose sight of the fact, that all the lines are on a bias, or, give extremes on a *mean* of measures, to accommodate to a *variety of correlating* measures.

(*c.*) From considerations of widths of passage-ways not shown on this diagram [but see Source of Measures, page 127 (*a.*), (1.)], the extreme width of the passage-ways, on the mean, is taken at   41.6666+ inches. The mean, founded on the data given in note (3.), is

taken at   41.460849   "

The least extreme then, if used at all, would be   41.265503   "

(Although all these measures are founded on data fully in accord with the spirit of this inquiry, they lack for that kind of support, given in all the other lines; in other words, they lack for interpretation.)

A very striking datum of width of passage-ways, as to what their *greatest* extreme is, is had in Piazzi Smythe's measure of the width of the granite portcullis block in the mouth of the ascending passage-way. He gives its measure of breadth at   41.6 inches.

Difference between this and the extreme taken,   .03   "

(*d.*) Now, taking the passage way to the queen's chamber, by means of biased lines, to indicate a permissible limit between 41.6666+ and 41.46+ inches, as to outside limits, the following data are derivable as to the east and west lengths of this room, as they have relation to the vertical plane parallel to these walls cutting through the axial line.

(1.) Take the distance of center of passage-way from the center of the pyramid as above,   293.06280+ inches.

Add ½ width of passage, $\dfrac{41.66666}{2} =$ 20.83333+   "

<div align="right">

Sum,   313.89613 inches,

Deduct 20.612 $\times$ 2=   41.224   "

(*a.*) Difference,   272.67213 inches.

</div>

Take length of queen's chamber at   226.21001   inches.
Deduct 20.612 $\times$ 2 =   41.224   "

(b.) Difference,   184.98601   inches.
From (a.)   272.67213   "
Deduct (b.)   184.98601   "

Remainder,   87.68612   inches.
From this deduct   .20612   "

Remainder,   87.48   inches.
Showing that the distance from the west wall of the
queen's chamber to the plane of the vertical axial
line is, numerically,   87.48
      Plus   .20612

Now, as to these, 20612 is our typical source of measures; and $\dfrac{20612}{4} =$

$$5153,$$

was *astronomically used* as $\dfrac{1}{1000}$ of one circular day to contrast with $\dfrac{1}{1000}$
of one solar day, as

$$5184,$$

and with $\dfrac{1}{1000}$ of one sidereal day, as

$$5169.846.$$

The difference between one circular day of 5153000''' and one sidereal
day of 5169846''', equals 4' 40'' 46'''.

Our typical form is *diameter* 6561, *circumference* 20612. Take the form:

$$\left. \begin{array}{c} 6.561 \\ 20.612 \end{array} \right\} \times \frac{4}{3} = \begin{array}{c} 8.748 \\ 27.48266666 \end{array}$$

where 27.4826666 is taken as a time measure of *the moon* in the measure
of *circular days*. Reduce to solar time, thus:

$$27.482666+ \times \frac{5153000}{5184000} = 27.3183220164+ ;$$

or,   27d. 7h. 38' 23'' 1''' 20'''';
Add,   4' 40'' 46'''
the above-stated difference between a circular and sidereal day, and there
results:

$$27\text{d. } 7\text{h. } 43' \; 3'' \; 47''' \; 20'''';$$

or the exact time of the moon's passage around the earth. (Parker's
Quadrature, page 116.)

(*a.*) Breadth $206.\dfrac{2647}{}$ inches;
diameter to *circumference* of 648 inches.

(*b.*) Length = breath $\times$ 2 = $412.\dfrac{5294+}{}$ inches;
diameter to *circumference* of 1296 inches, or 1 *square yard*, or
the $\frac{1}{4}$ of 5184, characteristic of the solar day.

(*c.*) Height $2062.\dfrac{647001}{}\times\dfrac{192}{1728}=$ $229.\dfrac{1820 \text{ inches.}}{}$

Piazzi Smythe's measures of (*a.*)   . $206.^{28}$ inches.

  "   "   "   (*b.*) $412.^{56}$ "

Howard Vyse's   "   (*c.*) $229.^{2}$ "

The floor line of the king's chamber, or the line $k\,a^9$ is, verti-
cally, by Piazzi Smythe, 7 inches above the intersection of the
floor line of the grand gallery with the vertical axial line of the
mass.

(17.) The length of the line $k\,d^3$ is taken at $330.\dfrac{13752}{}$ inches,
differing as being less than Piazzi Smythe's measure by .16248
of an inch; but he says $330.3\pm$ inches.

$330.13752 + 206.2647001\ (=d^3\ a^9) = 536.4019+$ inches:
for which see Source of Measures, page 138.

Closing these specifications, an interesting note may be made
of the variety of values to be found within very narrow limits.
By this system of measures, taken astronomically,

$$\sqrt{31415942.69+}\times 2 = 62831885.38 \text{ equals } 7926.\dfrac{565+}{}$$
or the *miles* equatorial diameter of the earth.   Now take the line
$b^1\ b^2$: it is in length $13.61519648+$ feet; modify this by the addi-
tion of .00983206 of a foot, making it 1361519648, numerically.

$$1361519648 \times \dfrac{12}{20612} = 7926.\dfrac{656}{}.$$
or this very equatorial value.   Such results, germane to the sub-
jects-matter of the general construction, serve to convince one of

the existence of permitted extremes on a mean of measures, con-
fined within very narrow limits.

It is seen that, from first to last, in these works they are
founded on the idea of co-ordination of measures of space (in
terms of the British measures) with those of time; justifying all
that the author advanced, by anticipation, on this idea, in Source
of Measures.

The king's chamber dimensions were made in terms for com-
puting tables of sines, etc., though not immediately apparent.
The Hindoos have the same method, in the same terms,
coming from their most ancient sources. Thus, in computing
the sines, they take the radius at 3437.74+. (the length of the
king's chamber in *feet* being 34.3774+), *diameter* to a *circum-
ference* of 10800, which *circumference* multiplied by 2 equals
21600 *minutes ;* the diameter is therefore 6875.48; hence the pro-
portion is—

$$6875.48+ : 21600.$$

Reduce these numbers to their least terms, by dividing them by
36, and we have—

$$190.985+ : 600;$$

where, in 190.985, we have 10 times the height of the king's
chamber in feet. (See Bentley's History of the Hindoo Astron-
omy.)

SECTION III.

Use of the form 6561 : 20612 to exhibit values of changes of geometrical shapes in integral numbers; showing numbers to be mental creative conceptions to which shapes are obediences as materializations: also other geometrical and astronomical uses of this form.

PART I.

GEOMETRY.

A circle is a perfect curve. It is of such a nature that, *protracted either way, it will re-enter upon itself.* The length value of this curve being found, the length values of the curve and its diameter can be expressed in the numerical terms of this length.

The measure of *circumference* of all regular polygons, including the circle, is ½ the *circumference* by the radius of the inscribed circle. (John A. Parker.)

The true ratio of circumference to diameter of all circles is 4 times the area of the circle inscribed in the square for the value of circumference, to the area of the circumscribed square for the value of diameter. (Parker.)

Given *diameter* $A = 81$, area of $B = 6561$, area of $A = 5153$; then,
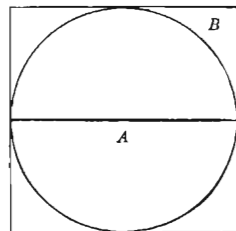
$$\frac{dia. \; A}{4} \times cir. \text{ of } A = \text{area of } A$$

or

$$\frac{81}{4} \times circumference \text{ of } A = 5153$$

$$81 \times cir. \text{ of } A = 5153 \times 4 = 20612$$

$$circumference \text{ of } A = \frac{20612}{81}$$

The *diameter* of *A* is given, and therefore,

$$diameter : circumference :: 81 : \frac{20612}{81}$$

and
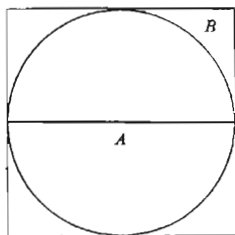
$$diameter : circumference :: 6561 : 20612$$

(The formulations are those of Mr. Charles Horne.)

Thus it is shown that the area of the square of 81 to the side, or 6561, being taken as diameter of a circle, the circumference of that circle will be the numerical value of the area of the inscribed circle multiplied by 4, or $5153 \times 4 = 20612$.

The number forms used in the following cases are 6561 : 5153, and 6561 : 20612, where the last form is assumed to be the true, and perfect, and only integral relation of *diameter* to *circumference* of a circle.

<p style="text-align:center;">*Case I.—Area Measure.*</p>

Side of *B*, or square, equals 81. Area of *B* equals 6561.

Area of circle *A* equals 5153. (John A. Parker.)

<p style="text-align:center;">*Case II.—Linear Measure.*</p>
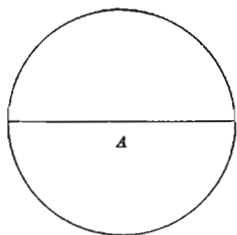
Diameter of *A* equals $81^2 = 6561$: then *circumference* of *A* equals (Case I.) 5153 $\times 4 = 20612$.

But since the above are but measures of length, one would suppose that if the numerical form was contained in *nature*, as a law, it should exhibit itself as integrally applicable to *solids*. Therefore :

Case III.—Solid Measure.

H is a cube of 81 to the edge; A is its inscribed sphere, having a *diameter of* 81.
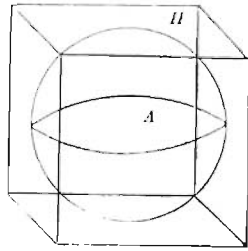
The usual and proper formula for obtaining the solid contents of the sphere is

$$\frac{1}{6}\pi \; diameter^3.$$

We have

$$6561 : 20612 :: 1 : 31415942691+$$

Then

$$\frac{20612}{6561 \times 6} \times 81^3 = \text{solidity of sphere.}$$

$$278262 \qquad = \text{same.}$$

(This result is the same as $3435\frac{2}{6} \times 81$, and $34.35\frac{2}{6}$ feet are $206.\frac{12}{-}$ inches, or 10 cubits, and are the breadth (north and south) of the queen's chamber.)

$$278262 = 20612 \times 13.5.$$

Then we have—

Solidity of cube equals $81^3 =$ 531441

Solidity of contained sphere equals $20612 \times 13.\frac{5}{-}$

Case IV.—Surface Measure.

Surface of cube H equals area of one of its faces multiplied by 6, or $81^2 \times 6 =$
39366

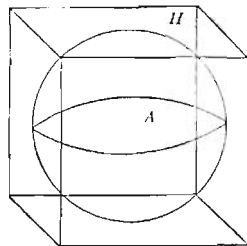The geometrical formula for obtaining the surface of the sphere is

$$\pi \; diameter^2.$$

Then we have—

$$\frac{20612}{6561} \times 6561 = \text{surface of contained sphere.}$$

So we have—

Surface of cube of 81 to the edge	39366
Surface of contained sphere	20612

Case V.--Convex surface of Cylinder, of height and diameter of 81, *compared with that of its contained Sphere.*

They are the same, viz :

Surface of cylinder	20612
Surface of sphere	20612

Case VI.—Solidity of Cone, Sphere and Cylinder.

Where the altitudes of a cylinder and of a cone, and the diameters of their bases, are equal to the diameter of a sphere, the relation of solidity of cone, sphere, and cylinder will stand as 1 for cone, 2 for sphere, and 3 for cylinder, as was proved by Archimedes.

Therefore, the solidity of the sphere of a *diameter* of 81 being

$$20612 \times 13.\frac{5}{4} = \qquad\qquad 278262,$$

the relative measures of solidities are as follows :

Cone with *altitude* and *diameter* of 81	139131
Sphere with *diameter* of 81	278262
Cylinder with *altitude* and *diameter* of 81	417393

Case VII.—Integral Numerical Relations between the Sphere whose diameter (side of Square, and diameter and height of Cylinder) is 81, *and the Convex Surface of the Cone, the radius of whose Base is* 81.

If the height of the cone is 81, the slant height will involve a decimal (in the diagonal of the square of 81).   We therefore have

to resort to such numbers as will give an integral value for the slant height. The least integral values applicable to the measure of a right angled triangle are 3 for base, 4 for height, and 5 for hypotheneuse.

As a cone is described by a revolution of the right-angled triangle about its perpendicular, these least integral values apply to the elements of the cone. $A B$ is 5, $A D$ is 4, $B D$ is 3, and the base of the cone is 2 $B D = 6.$
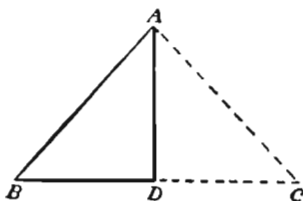
(*a.*) Multiply these last numbers by 27 :

$A B$	135
$A D$	108
$B D$	81

(108 is *circumference* to the breadth of the king's chamber in feet.)

Solidity of sphere (Case III.) is

$$81^3 \times \frac{1}{6}\pi = 20612 \times 13.5$$

But 20612 is circumference to a *diameter* of 81^2: so in the numerical elements of this cone there is a correlation with the solidity of the cube of 81 and its contained sphere, as —

Circumference of the square of the radius of base multiplied by $\frac{1}{10}$ the slant height, equals the solidity of the sphere contained in the cube of 81 to the edge.

(*b.*) ½ *circumference* of base by slant height equals the convex surface of the cone.

Then the convex surface of this cone is   34353⅓

(Breadth of queen's chamber equals $\dfrac{34.353\frac{1}{3}}{2}$ = 17.1766+ feet.)

(*c.*) Multipy these values by 81, and we have—

A B	10935
A D	8748
B D	6561

Convex surface is ½ *circumference* × 10935 = 22539220 : where the radius is 6561, or *diameter* to *circumference* of 20612 (or 5153 × 4), and the height is $6561 + \dfrac{6561}{3} = 8748$

Here we have this correlating relation :

Circumference of radius (as a *diameter* value) × $\dfrac{\text{slant height}}{81 \times 10}$ = solidity of the sphere contained in the cube whose edge is 81. (Case III.)

(*d.*) Multiply the values in *c* by 1⅓, and we have—

A B	14580
A D	11664
B D	8748

Here are elements for an astronomical application. (Part II. of this Section, Case III.)

Again, $\dfrac{874800}{13.5} = 64800$ is *circumference* to *diameter* of 20626.$\dfrac{47001+}{}$, a value of *seconds* used in astronomy to obtain the sun's parallax and distance.

Height 11664 is *diameter* to standard *circumference* of great pyramid in inches. This *diameter* as 11.$\dfrac{664}{}$ inches was taken by the Roman nation as their foot measure.

These numerical applications teach the meaning of the Egyptian symbol of a man standing before one of their gods, his hand extended supporting on its palm *a cone*. The forearm was the cubit, and the hand was the palm, or a division of the cubit.
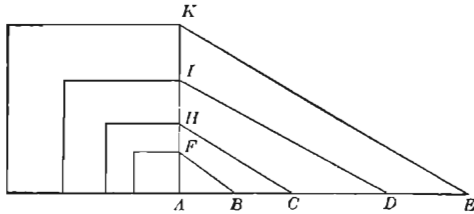
Under the formula for solidity of a cone, viz :

$$\tfrac{1}{3}\ \pi\ R^2\ \text{altitude.}$$

The solidity of this cone is by equivalence—

$$\frac{81^2 \times 81^3}{20612}, \text{ or } \frac{6561}{20612} \times 81^3$$

NOTE. A numerical source of almost infinite variations of inter-connected proportional parts on these forms can be geo-metrically shown, as involving at once values peculiarly the prop-erty of square, circle, triangle, and cone.

$A F = 3$, $A H = 9$, $A I = 27$, $A K = 81$.

$A B = 4$, $B F = 5$. Let $A_. C = 40$, $C H = 41$, $A D = 364$, $D I = 365$. $A E = 3280$, $E K = 3281$.

Here the squares are multiples of the number 3, as 3, 9, 27, 81. The triangles are of a nature such that the hypotheneuse always exceeds the height by unity. This form may be varied from in-finitely; and as to methods of integral triangulation, see Meyer's Quadrature (Cincinnati.)

The square of 81, shown herein to be of so much importance, is founded on that of 3, which is the base of a triangle from whence such curious results have been derived. Take a use of the number values attached to these triangles, premising that the number 9 is also the origin of the sides of the triangles, as $4 + 5$ $= 9$, $9^2 = 81 = 40 + 41$, $81 \times 9 = 729 = 365 + 364$, and 729×9 $= 6561 = 3281 + 3280$:

Add (1.) $365 \times 2 =$ $730.000000000 +$

(2.) 3280 $32.800000000 +$

(3.) $\dfrac{3280}{54}$ $.607407407 +$

Sum, 763.407407407

And, numerically, we have the standard base side of the great pyramid in feet.

But $763.4074074074 + \times 54 =$ 20612 which use, while it affords data the same as in all the cases *supra*,

also shows that the creative conception of the proportional parts
of diameter to circumference of a circle, had its origin in that
thought symbolized by the number 9; so that *diameter* is not
only determinate with *circumference,* but they are merely related
issuances from the common source of 9. Another use of this
number 9, producing the same results through the order of the
digits, might be given.

<div align="center"><i>Case VIII.—Use of the Diagonal of the Square of</i> 81.</div>

The diagonal of the square of 81 is a mean proportional be-
tween a value of circumference and of diameter of a circle, such
that one extreme is *diameter* to *circumference* of

<div align="center">a circle of 360;</div>

which value, 360, for *circumference,* is the numerical origin of
what is called—

<div align="center"><i>The Analytical Unit of Circular Measure ;</i></div>

where the angle measuring the curve of a circle, shows that
curve to be equal in length to the radius.

(*a.*) We have the form—

$$20612 : 6561 :: 64800 : 20626\frac{47001+}{}$$

where the first term is a *circumference* value, and the last is a
diameter value of the circle. Divide this form by 54, and we
have

$$381.7037037+ : \frac{6561}{54} :: 1200 : 381.97166+$$

where the first term is the standard measure, and the last term is
the exact measure, of the half base side of the great pyramid.
(The full base side, then, is a *circumference* to a *diameter,* as

$24 : 7.\frac{6394+}{}$, where 24 can be taken as the 24 hours into which
the circle of 360 is divisible by 15 parts of 360 to the hour.)
Multiply this last form by $\frac{3}{16}$, and we have

$$114.51111+ : \frac{6561}{180} :: 360 : 114.5914999+$$

(*b.*) The diagonal of the sphere of 81 to the side is—

$$114.55129+$$

and, as a fact, this is a mean proportional between the extremes in the last form, for :

$$114.5111+ \; : \; 114.5512+ \; :: \; 114.5512+ \; : \; 114.5914+ \; ;$$

which shows that the diagonal of this square of 81 has a proportional connection between values of *circumference* and *diameter* of the circle originating from the number 9, the base of this square, as has been shown.

(*c.*) But the extreme $114.591499+$ is *diameter* to a *circumference* of 360, and the radius therefore will be $\dfrac{114.5914}{2} =$ $57.2957499+$. Now, where a portion of the arc of this circle, equal in length to the radius, is intercepted between the radii, the numerical value of the angle measuring this arc will also be equal to that of the radius, as
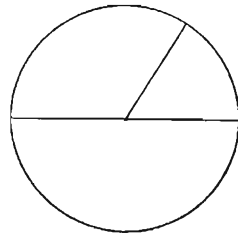
radius =	$57.295749+$,
intercepted arc =	same,
contained angle =	same ;

which holds true of no other values assigned whatever.

The angle $57°295+$ is that one which will always give the intercepted arc as equal to the radius, but any other value given to the radius, or arc, will differ numerically from the value of the angle. Hence this is the normal numerical value giving this geometrical result.

Hence, *circumference* value 360 of a circle, derived from the form 6561 : 20612, which is taken from the square of 81 to the side, and from the number 9, becomes the normal measuring circle for terrestrial and celestial measures.

PART II.

Astronomical use of the form
6561 : 20612

Case I.

The usual measure of the earth's time about the sun has been taken in the terms of a *natural measure* of time, viz., the rising and setting of the sun.   By long continued observation the numerical notation of this period of time, viz., the solar year, has been found to be, in the terms of this natural measure,

$$365.256374+ \text{ days.}$$

Now suppose that while this is so, some mental creative power had thought of, and willed that the proportional parts of the earth's orbit, as regards all other cosmical measures, should correlate with that number value to which the abstract relation of diameter to circumference of a circle is found to render obedience in shape.   This value, as thus found empirically, can be relegated for its origin to *circumference* values of a circle, taken from the form 6561 : 5153, as follows:

$$
\begin{array}{r}
360000000 \\
5153000 \\
103060 \\
31415 \\
\hline
365.256374+
\end{array}
$$

where 360 is the normal measuring circle derived from the square of 81 and the form 6561 : 5153 (see case VIII., Part I.), 5153 is $\frac{1}{4}$ *circumference* of 20612, 10306 is $\frac{1}{2}$ circumference of 20612, and 31415 is *circumference* to a *diameter* of unity.   This value of the year can not be reconstructed, integrally, from a common, or unit, numerical source, or from the numerical value of any shape save as interpreted by the above form of 6561 : 5153 only, and alone.

Case II.—Diameters of the Earth in Miles from the form
6561 : 20612

(*a.*) Take *circumference* derived from this form of 31415942.-
6916162 : Multiply by 2, and we have

62831885.383324

as a circumference value. Suppose we change the nature of this
value to *that of the area of the square.* Then the side of that
square will equal

$$\sqrt{62831885.+}, \text{ or } 7926.\frac{565+}{}$$

which in *miles is the equatorial diameter of the earth.*

Here is a change of numerical notation, comporting with a
change of geometrical shapes, producing this result. Consider
how we have found in the pyramid works linear measures co-
ordinating with time measures. Here we find the same thing
with the addition of the bringing in on to the same ground the
co-ordination of geometrical shapes.

(*b.*) Reduce this miles value to *feet,* or

7926.565 × 5280 =	41852743.680
Deduct	144135.

Remainder,	41708608.680

which, brought back to miles, gives

$$7899.\frac{357+}{} \text{ miles ;}$$

and this is the *polar diameter of the earth in miles.*

NOTE. This value 144135 is the *reverse reading* of the cube of 81, where
81³= 531441. It is a biblical use. 144 is Adam, and 135 is A S H, or
woman, and it is stated that God brought the woman to the man and
joined them, or 144135, which, reversed, is the cube of 81. Why, for in-
stance, the astronomical formula that the *squares* of the times are as the
cubes of the mean distances, *is so,* is to us a mystery. It simply is so be-
cause it is so: it is part of the *fiat.* So this, to us, so novel use of *reverse*
values, if found to be useful, or used, in cosmical developments, must be
accepted as a use in natural building. Here it seems to point to some
method of notating elliptical properties.

Case III.— The Moon's Time from Parker's Quadrature.

Mr. Parker takes the following cosmic values:

The solar day of 24 hours has	5184000'''
The sidereal day has	5169846'''
The circular day has	5153000'''

where this, as an abstract measure, is taken as the $\frac{1}{4}$ of a *circumference* of 20612, or as the area of the circle in the square of 561.

Take the form—

$$\left. \begin{array}{c} 20.612 \\ 6.561 \end{array} \right\} \times \frac{4}{3} = \begin{array}{c} 27.482666+ \\ 8.748 \end{array}$$

This value of 27.482666 as *circular* time, reduced to solar time, gives

$$27.482666+ \times \frac{5153}{5184} = 27.3183220164+$$

or reduced to time scale, *as days*, gives

27d. 7h. 38' 23'' 1''' 20''''

To this add the difference between one sidereal and one circular day, or

16846''' = 4' 40'' 46'''

and there results

27d. 7h. 43 3'' 47''' 20''''

which is the exact value of the moon's period.

NOTE. By Mr. Parker, the time of a sidereal lunation from the best authorities when he wrote was 27d. 7h. 43' 4'' against his as above, showing the difference of $\frac{1}{5}$ of a second. The solar lunation was given at 27d. 7h. 44' 3'', against his of 27d. 7h. 44' 2''.$\frac{84}{}$

At the present day, this value of the solar lunation is retained as 27d. 7h. 44' 2''.$\frac{87}{}$, agreeing with Parker to within $\frac{3}{100}$ of a second, while, however, a great difference has been made as to the value of a sidereal lunation, as 27d. 7h. 43' 11''614; for this reason, as given by Godfray: " This is the value at present, for

comparison with ancient observations led Halley to the conclusion that the moon's mean velocity is being accelerated, and the period of a revolution shortened." It tells badly for astronomical accuracy to make a change of 9″ in such a period on the strength of ancient records, where great uncertainity exists as to the correct chronological periods of those old observations. (See John Von Gumpach on Mr. Airy, the Astronomer Royal.)

Case IV.—Mean Solar Year by Mr. Parker

He takes the form

$$\left.\begin{array}{c} 206.12 \\ 65.61 \end{array}\right\} \times \frac{16}{9} = \frac{366.43555+}{116.64}$$

where he makes 366.4355+ the base for the calculation of the mean solar year. By simple and orderly means from use of this form, he gives this value at

$$365d.\ 5h.\ 48'\ 50''\ 53'''\ 6''''$$

His steps are :

1st. *Circumference* value as stated   366.4355+

2d. Reduced to solar time by the factor $\frac{5153}{5184} \times$

3d. He adds one sidereal day.

4th. He adds $1\frac{1}{3}$ of the excess over the mean between one circular and one sidereal day, reduced to solar time.

NOTE. There is a method of use of the form of 113 : 355 for obtaining the year value. To compare and force the form 113 : 355 by that of 6561 : 20612, we have

$$6561 : 20612 : : 113 : 355.000152415+$$
Then

$$\frac{20612 : 20626.\overline{47001}}{54} : : 355.000152415+ : 365.256389+$$

which is correct as compared with the received value to less than the $\frac{16}{1000000}$ of a day in the year's period.

*Case V.—The Angle of Solar Parallax, and the Sun's.mean
distance.*

The results to be derived from the late transit of Venus are not
expected to be ranked as original or basic data, but rather as data
to be compared with, and made to conform to, other data derived
from independent sources.   A very high authority has written to
this effect, and gives the independent results as follows:

(1.) By the effect of the sun's attraction on the motion
of the moon.

<div align="center">Parallax by this method,   8." 83</div>

(2.) By measures of the planet Mars when nearest the
earth, under very favorable circumstances.

<div align="center">Parallax by this method,   8." 85</div>

(3.) By measuring the velocity of light.

<div align="center">Parallax by this method,   8." 86</div>

(4.) By an independent method by Leverrier.

<div align="center">Parallax by this method,   8." 83</div>

He then says : "From the general accordance of these various
results, it would appear that the solar parallax must lie between
pretty narrow limits, probably between 8"82 and 8"86."   Else-
where, he gives the result as 8"84+.

(*a.*) The astronomical formula for obtaining the sun's distance
(see Godfray's Astronomy), is

$$\text{Distance of sun} = \frac{\text{Radius of Earth}}{Sin.\ Horizon.\ \text{parallax}}$$

and

$$\text{Distance} = \frac{\dfrac{\text{Radius of Earth}}{\text{Value of } Sin.\ Horizon.\ \text{parallax}}}{206264.7001}$$

(Here 206264.7001 is assumed as the correction of 206264.8+ by
Godfray.)

(*b.*) Now, Mr. Parker has also a form for finding the sun's
distance (see his Quadrature), which is

$$\text{distance of sun} = \text{diameter of earth} \times 11664$$

where 11664 is derived from his original form as

$$\left. \begin{array}{c} 20612 \\ 6561 \end{array} \right\} \times \frac{16}{9} = \frac{36643.555}{11664}$$

He takes diameter of earth as *mean* diameter, for which he gives no sufficient reason. On the contrary, the author takes this as the equatorial diameter of the earth.

(*c.*) Making the equations in (*a.*) and (*b.*) equal,

$$Diameter \text{ of earth} \times 11664 \frac{\text{Radius of Earth}}{\overline{= \text{Value } Sin. Horiz. \text{ parallax}}}$$
$$206264.7001+$$

which, reduced, gives,

Value *sin.* horizontal parallax =   8."84193

or length of arc   8.84193;

which agrees as closely as seen with the values as found above, expected to be confirmed by the transit observations. It must be noted, however, that the transit was observed the earth being in perihelion, and therefore this result of 8"84193 being taken as the *mean*, the results of the transit should give a large angle, say 8"91, or thereabouts.

(*d.*) Taking the earth's equatorial diameter as found, at 7926.656 miles, distance of sun will prove to be

$$7926.656 \times 11664 = 92.456515 \text{ miles.}$$

(Note here the use of this value 20626.47001 in this parallax formula and in the pyramid construction.)

Case VI.—General Law of Interplanetary Distances.

here is but one further case to be noticed in this astronomical connection, which is the general law of Kepler. It is that
The *squares* of the *times* are as the *cubes* of the *mean distances*.

This terminology fits exactly as part and parcel of, and as a sequence to, the method herein stated.

So we have in these sections:

(1.) A Source of Measures; Egyptian, Roman, British, and, without doubt, Hebrew.

(2.) The great pyramid constructed from this source; essentially justifying the use in the perfect closing of the lines by means of its rigid application.

(3.) The most important features in geometry exhibiting themselves as obediences to this source, as to a creative mandate.

(4.) And, finally, the governing features of astronomy, as to measures of space and time relegating themselves to this same source, as to a creative origin.

Evidently we have been dealing with a *natural*, or better a Divine system; albeit in the mist, for lack of a right method of using the model form.

SECTION IV.

A CRITICISM ON THE, SO-CALLED, LEGENDRE AND PLAYFAIR
METHOD OF RECTIFICATION OF THE CURVE OF THE CIRCLE,
BY MEANS OF INSCRIBED AND CIRCUMSCRIBED POLYGONS,
SHOWING ERROR IN THE MEANS EMPLOYED.

§ 1. Where an erroneous deduction has for long been postulated and accepted as a truism, the error of such a deduction must be shown as a first step toward the ascertainment of what the specific truth really is.

There are very many men so made up by nature, that where by long habitude, they have unconsciously entertained and cherished a postulate which perchance is radically wrong, they prefer to adhere, as by custom, to the error, and resolutely close their eyes to the truth; even though it be presented to them. It is for this reason, chiefly that radical reforms, no matter in what department of culture, are so obnoxious to a conservatism which, to a great degree, is perhaps as necessary to the well-being of culture as truth itself.

But sometimes where mighty consequences toward the betterment of humanity offer themselves as the reward of the establishment of a primal truth, in the face even of the profoundest convictions, entertained and cherished for never so long, supported even by the highest authorities and the most illustrious names, the hand should not be stayed by any considerations of conservatism, from pointing out radical error.

The author is well aware of the obloquy attaching to any criticism of the kind he is now entering upon; and he believes he understands, too, that really this kind of obloquy is shot out from a very base interest at bottom, which desires that the error may prevail rather than that the truth may be ascertained. He ap-
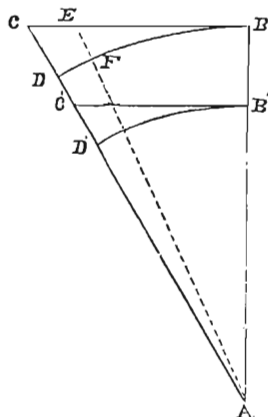
peals, therefore, to the fair-minded, to give this criticism a care-
ful reading; he being perfectly willing, if in the wrong, to bear
the jeers usually attendant upon any effort of this kind.

§ 2. Before proceeding to the demonstration of error in the
Legendre or Playfair method of rectification of the curve, he will
give two instances of erroneous deductions connected with the
subject-matter of approximate values.

(*a*.) Sir Isaac Newton, in laying the foundations of his Prin-
cipia, in "Lemma I.," postulates:

"*Quantities and the ratio of quantities which, in any finite time,
converge continually to equality, and, before that time, approach
nearer, the one to the other, than by any given difference, ulti-
mately become equal.*"

This postulate is manifestly untrue, for: let *A B C* be any tri-
angle, and with the length *A B* as a radius, let the arc *B D* be
drawn to intercept the line *A C*. Sup-
pose this figure, both for triangle and
segment of circle, be continually and
proportionately reduced, as *A B' C'*,
A B' D'; the *relative* differences *will
never be changed*, however far the re-
duction be made, and consequently the
ratio of difference will always remain
the same. The proposition is axiomatic,
and does not require demonstration.

But take the triangle *A B C* with
the circular area *A B D*, as decreasing
toward *A B*, by different and successive
steps, one of which is, say, *A B E*, with the circular area
A B F. By this method, no geometrical ratio can be preserved.
The ratio of diminution has to be calculated by numerical com-
putations. But *there being* a ratio of diminution, in which the
difference between the straight line and the curve, is, say, a de-
creasing one, it is nevertheless, plainly to be seen that the only
equality of the curved line *B D* with the straight line *B C*, in

any possible diminution, will be when the line $A\ C$ shall so close upon $A\ B$ as to wholly coincide with it (as to the value of their lengths now or at last becoming alike), and become, with $A\ B$, one and the same line, at which stage, or condition, there can be neither curved line nor straight line left for comparison ; *there- fore*, so long as these lines—i. e., $C\ B$ straight, and $B\ D$ curve— exist at all, either in whole or in part, there can, by possibility, be no equality between them.
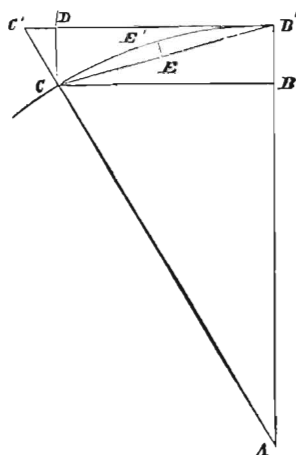
Hence, the "*Lemma*" is false in its terminology ; nor is it even right in a showing of a growing or proximate *equality of likeness* as regards the *ultimate structure* of these different kinds of lines, as will be now shown.

(*b.*) This method of Legendre and Playfair was criticised by Torelli, as thus stated by Playfair in the appendix to his Euclid:

"It is impossible, from the relation which the rectilineal fig- ures inscribed in, and circumscribed about, a given curve have to one another, to conclude anything concerning the *properties of the curvilineal space itself*, except in certain circumstances which he has not mentioned."

As regards this statement, Playfair assumed the affirmative as against Torelli; and yet, as to the structural conditions, or prop- erties of the lines, Torelli's statement *can be demonstrated*, Play- fair to the contrary notwithstanding.   This is to be seen from the following :

The burden of the effort of Legen- dre and Playfair is to show that, by the growing diminution and equality between the circumscribed $C'\ B'$ and the inscribed $C\ B$, the curved line penned up between them becomes measurable; which curved line, at any stage of bisection, being an even and known part of the curve of the entire circle, from it the length of the entire circumference, and conse-

quently the area of the curved space, is to be had.   The measure
of this growing equality is always to be tested by the difference,
at any stage of bisection, between $C\ B$ and $C'\ B'$.   In the dia-
gram, which may stand for any stage of bisection, $C\ B'$ is the
chord of half the arc, and therefore $E\ E'$ is $B\ B'$ for every suc-
ceeding bisection.   Now, from B' as a center, with $C\ B'$ as a
radius, describe the arc $C\ D$.   Then $C'\ D$ will be the quantity
which vanishing by diminution, the triangle $C\ B'\ C'$ will event-
ually, by the Lemma of Sir Isaac Newton, become $C\ B'\ D$, and
isosceles; when the curve lying between $C\ B'$ and $D\ B'$ *must*,
by hypothesis, become equal to $C\ B'$, or to $D\ B'$, as a straight
line.   Such being the conditions, it might be looked for as a
certainty that with the diminution of $C'\ D$, an accompanying
diminution would take place in $E\ E'$, as by a direct ratio, so as
to exhibit the fact of growing coalescence of the curved with the
straight line.   But to the *contrary of this*, as a fact, taking the
value $C'\ D$ (the difference between $C\ B$ and $C'\ B'$) and $E\ E'$
for a number of bisections, and it will show that, with relation to
the diminution of $C'\ D$, $E\ E'$ is *increasing*.   It becomes a
question, on the showing, whether the arc is not, *relatively*, sep-
arating from, instead of approaching the chord.   If so, the ques-
tion is: What is the effect of this?   What does it mean?   And
this question is left to the reader for answer.

Practically, a calculation of the value of π to 6144 sides of the
polygons, taken from the base that the perimeter of the polygon
of six sides is *one* with 25 cyphers, making the radius one with 6
repeated 24 times, yields the following data as to the relation, or
ratio, between $C'\ D$ and $E\ E'$, as they respectfully diminish
with continuing bisections of the arc:

6 sides,	$C'\ D : E\ E' : :$	1 :	5.0706
12 "	"	"	1 :	1.2404
24 "	"	"	1 :	2.5301
48 "	"	"	1 :	5.0847
96 "	"	"	1 :	10.1818

192 sides, $C'\ D : E\ E'$: :   1 :   20.3697
384   "   "   "   1 :   40.7426
768   "   "   "   1 :   81.4882
1536   ."   "   "   1 : 162.9917

which shows a rapid ratio of diminution of $C'\ D$ with relation
to that of $E\ E'$; and the practical diminution of $C'\ D$ may be
judged of from a statement of its value at 6 sides and 6144 sides,
as follows:

6 sides, $C'\ B' =$ 962250448649
6 sides, $C\ B' =$ 862730150341
                                                                      ————————
       $C'\ D$, or difference,   99520298308
6144 sides, $C'\ B'$ 000852211623
6144 sides, $C\ B'$ 000852211539
           $C'\ D$, or difference,   84

which simply shows that the triangle $C\ B'\ C'$ is approaching to
being isosceles unattended by a relatively rapid approximation, *in
structure*, of the chord $C\ B'$ to the curve $C\ B'$. But the rela-
tion of this approximation can be had by a statement of the con-
tinuing ratios between $B\ B'$ and $E\ E'$, and these are as follows:

$E\ E'$ for   6 sides : $B\ B'$: : 1 : 3.9318516
              12   "   "   1 : 3.9828897
              24   "   "   1 : 3.9989291
              48   "   "   1 : 3.9997322
              96   "   "   1 : 3.9999330
             192   "   "   1 : 3.9999832
             384   "   "   1 : 3.9999958
             768   "   "   1 : 3.9999989
            1536   "   "   1 : 3.9999997

which simply shows that while the ratio of $E\ E'$ to $B\ B'$ can
never become 1 : 4, the ratio of $C'\ D$ to $E\ E'$ can become
1 : ∞ large; or, that the triangle $C\ B'\ C'$ may become isosce-
les, while yet, absurdly enough, the chord and arc have not as
yet assimilated; not only so, but have separated by a relatively
infinite quantity.

These instances serve to qualify the estimation now had of the exactitude of the foundation conditions in this speciality, lying, as they do, at the base of the higher regions of mathematical science as at present accepted; a science so much vaunted as being accurate and beyond error. They serve as an introduction to the following:

§ 3. *The Legendre or Playfair method of obtaining the value of π, or rectification of the curve of the circle, is geometrically defective; and is insufficient to obtain as claimed the exact numerical value of the curve to within less than any assignable quantity.*

(a.) *The Essential Element of the Playfair Method.*
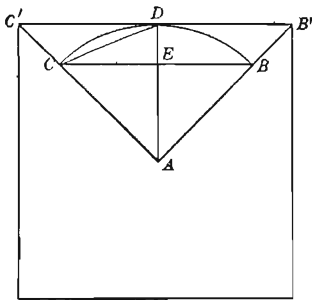
Let $C D B$ be the $\frac{1}{4}$ of the curve of a circle, embraced in the square polygon, of which C' B' is the side, and itself embracing the square polygon of which $C B$ is the side: the sides of these polygons being parallel to each other and embraced, respectively, between the radii $A C$ and $A B$, and the same radii extended to $A C'$ and $A B'$: the termini of the side $C B$ of the inscribed square being the termini C and B of the embraced curved $C D B$, or the $\frac{1}{4}$ part of the circumference of the circle, and also the termini C and B of the radii $A C$ and $A B$. The side C' B' of the circumscribed square touches and terminates the radius $A D$ and the middle of the curve $C D B$, in the *point D*. The reductions of the sides of the polygons take place by drawing the chord $C D$ of the curve, or arc, $C D$; a perpendicular is let fall from A, the center of the circle, on $C D$, and continued till it touches the curve, necessarily bisecting the curve $C D$, which is the $\frac{1}{8}$ part of the entire circumference. $C D$, straight line, is the side of the second inscribed polygon. The radii $A C$

and $A\ D$ are extended to terminate a tangent line to the curve $C\ D$, drawn parallel to $G\ D$, and this tangent line becomes the side of the second circumscribed polygon.

This process is continued an indefinite number of times agreeably to the attainment of the desired exactitude of the value of the curve. The value of the curve, as regards the entire circumference, is always known, for it runs down with succeeding bisections from $\frac{1}{4}$ to $\frac{1}{8}$, then $\frac{1}{16}$, then $\frac{1}{32}$, and so on.

Now this very fact (as claimed), viz., that even and known portions, as $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$, and so on, of the curve of the entire circumference, *are respectively limited, wholly limited, and not less than limited*, between the sides of the polygons, as bisections take place, is that on which the method of Playfair and Legendre is founded. Thus, it is absolutely necessary that the termini C and B of the chord $C\ B$ shall wholly limit, no more than limit, *and exactly terminate*, the length of the curve $C\ D\ B$, as (in this case) $\frac{1}{4}$ part of the circumference of the circle. The same may be said of the termini C and D of the chord $C\ D$, of half the arc $C\ D\ B$, terminating the curve $C\ D$, as (in this case) $\frac{1}{8}$ of the circumference of the circle; and so on for every succeeding step of bisection. And this fact is an essential element in this method.

It is seen that the geometrical function or use of the sides of the polygons in this problem, is in the mere mechanical fact of *exactly limiting the termini of the curve and nothing more, nothing less.* Apart from this there is no structural relation whatever between the right lines and the curved line.

It so happens that the value of $A\ C$ and $C\ E$ being known, we have $\sqrt{A\ C^2 - C\ E^2} = A\ E$; and $A\ D$ being known, $A\ D - A\ E = D\ E$; thus we have the value of the sides $D\ E$ and $C\ E$ of the new triangle $C\ D\ E$, of which the side $C\ D$ is the chord of half the arc $C\ D\ B$; and so on. Reduction being thus made in the sides of the polygons, which, as claimed, always embrace a *known* portion of the curve of the entire circle, when,

at some remote reduction, the sides of the polygons have become exceedingly small in value, it is *assumed* that the curved line, *penned up* between them (a known portion of the curve of the entire circle), is of the same value with that of the reduced sides of the polygons, and on this assumption, which is, as said, dependent on the fact of the exact limitation of the termini of the curve by the termini of the sides of the polygons, the value of the circumference of the circle is claimed to be obtainable to *within less than any assignable limit;* because any limit being assigned, the bisections can be continued until the exactitude of relation shall extend to and beyond the assigned limit.

(b.) The Definition of a Line.

Modern geometry has to do, and only to do, with shapes or magnitudes, the analysis of shapes, and the relations of shapes, similar or dissimilar to each other, in its speciality. If number equivalents are used in modern geometrical analysis, they are simply expressions of, and translations of, geometrical conditions into another and an *equivalent* form of expression. The definition, arising in modern geometry, of a line, that it has length without breadth or thickness (as numerically a 1, or *one*, of length alone), could *only* have been adopted for the translation of geometrical conditions into other forms of expression, as being in the *first place permitted by geometrical relations.* It was found that admitting breadth of a line, as say 1, or *one*, in all geometrical calculations involving the use of right lines, the value of breadth might be reduced indefinitely, and finally eliminated, because the geometrical discussions of plane figures admitted of this. It was assumption to unqualifiedly make use of the same definition as regards the discussion of the relation between right and curved lines, in calculations of the sides of the polygons, as by Legendre and Playfair, without first showing that the geometrical conditions of the method, as it progressed in the bisections of the chords of the arcs by means of the calculations of the

sides of the polygons, permitted the use of this definition as ap-
plying to the measure of the curved line considered to be penned
up, or limited between the sides of the inscribed and circum-
scribed polygons, as continued and successive bisections took
place.   The proper and very first step in the problem, as it is one
peculiar to itself, and occupying a place *sui generis*, should have
been, if possible, the establishment of this fact.   As a fact, it
seems that this step is impossible.

(*c.*) *Proof of the correctness of the definition of a line, that it
    may have length without breadth or thickness, when applied
   to the admeasurement of plane shapes, or magnitudes.*

The propriety of, or the properness of, the definition of a
right line that it has no breadth, or thickness, *limiting the defi-
nition to the discussion of plane shapes*, can be exhibited and
proved geometrically ; which is the only proper mode of its es-
tablishment.

Empirical assumption of such a definition would be but geo-
metrical quackery.

In the right-angled triangle $A\ B\ C$,
the two right lines $B\ C\ D\ D$ and
$E\ E'\ F\ F'$ are to be made use of
as half sides of polygons attempted to
be embraced between, and to be used
to measure the space or magnitude be-
tween the bounds $A\ C$, $A\ B$, and
$C\ B$, and $E\ E'$, by, if possible, a re-
duction of the lines in width, they
being of equal breadth, that is, $B\ D =$
$E\ F$.   These lines being of the same breadth, *i. e.*, $B\ D =$
$E\ F$, we have the proportion

$$A\ E : E\ E' \times E\ F :: A\ B : B\ C \times B\ D' ;$$

where $E\ E' \times E\ F$ and $B\ C \times B\ D'$ equal, respectively, the
quadrangles, or lines, $E\ E'\ F\ F'$, and $B\ C\ D\ D'$.   But since
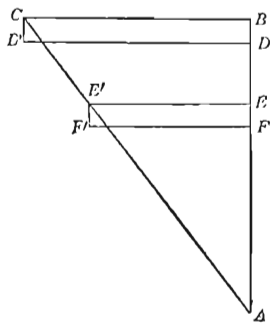
$E F = B D$, dividing the second and fourth terms of this pro-
portion of $E F (= B D)$, we have

$$A E : E E' :: A B : B C;$$

where $E E'$ and $B C$ are the extreme edges of these lines, ex-
hibiting length without any other quality.

(*d.*) *But this definition is not good, and will not hold good, when
attempted to be applied in the Playfair method (a special one,
and sui generis), to the admeasurement of the curved line of
the circle.*

If this definition is to be applied to right lines as measuring
the values of a curved line, in the particular problem of the recti-
fication of the curve by calculations of the sides of the inscribed
and circumscribed polygons, as by Playfair and Legendre, then
the propriety, or properness, of this definition, *as thus applied*,
should be susceptible of being shown also.

Referring now to the fact shown in (*a.*) that the essential fea-
ture of the Playfair problem, or method, is that the extremities,
or termini, of the curved line claimed to be penned up between
the sides of the polygons, are wholly defined, wholly limited, ex-
actly terminated, no more, no less, by the ends or termini of the
sides of the polygons, let us attempt to establish Playfair's and
Legendre's definition of a line, that it has length without breadth,
as it has application, and as they do apply it, to the admeasure-
ment of the curved line of the circle, embraced between the sides
of the polygons.
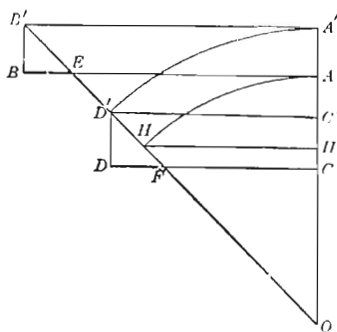
Testing this matter and leav-
ing out of view that right line
having breadth must be right-
angled parallelograms, as $A B$
$B' A'$, and $C D D' C'$, and drop-
ping consideration of the sur-
pluses of these lines, viz., $E B B'$,
and $F D D'$, laying outside of
the area $O B' A'$: Let the sides
of the inscribed and circum-

scribed polygons be $C\ F\ D'\ C'$ and $A\ E\ B'\ A'$, limiting between them and the radius $O\ A'$, and the radius $O\ D'$ extended to B', the curved line $A\ A'\ D'\ H$, which has the same *breadth* $A\ A'$ (measured on the radius cutting this line, viz., $O\ A'$) with the right lines; that is, $C\ C' = A\ A' = A\ A'$, for the breadth of the lines straight and curved.

It is seen that the right line $C\ F\ D'\ C'$ *more than limits* the terminus, or end, of the curved line $D'\ H$, by the excess of the value of the area $C\ F\ H\ H'$, and of its width $C\ H'$. Therefore, as the *gist* of the problem by Playfair is the exactly defining, the wholly limiting, the exactly terminating, no more, no less, of the ends of the curved line, by the ends of the right lines in *position* (without which that problem is a geometrical failure for exactitude), *deduct* this surplus area $C\ F\ H\ H'$ (a part of the right line $C\ F\ D'\ C'$) from the right line $C\ F\ D'\ C'$, so as to leave the geometrical condition of the problem as exhibiting that which Legendre and Playfair postulate as a fact, viz., that the right lines always (in connection with the radius $O\ A'$ and the radius $O\ D'$ extended to $O\ B'$) wholly define, wholly limit, exactly terminate, no more, no less, the termini of the curved line.

This being done; which is an essential necessity to be in accord with Legendre and Playfair, the right lines $A\ E\ B'\ A'$ and $C'\ D'\ H\ H'$ remnant of $C\ F\ D'\ C'$ are no longer *in a condition, geometrically, such* as will admit, *in pari passu*, of their reductions in breadth to the value of *zero*.

In (*c.*) we had

$$A\ E : E\ E' \times E\ F :: A\ B : B\ C \times B\ D$$

and $E\ F$ being equal to $B\ D$, dividing by $E\ F$, we have

$$A\ E : E\ E' :: A\ B : B\ C$$

establishing the Playfair definition as applicable to the admeasurement of plane areas.

But here $O\ C' : C'\ D' \times H'\ C'$ is *not as* $O\ A' : A'\ B' \times A\ A'$. But let this proportion stand as true, viz.,

$$O\ C' : C'\ D' \times C'\ H' :: O\ A' : A'\ B' \times A\ A';$$

or rather as taken to be true by Playfair and Legendre, for *they*

have assumed it as true, though $A\ A'$ is greater than $C'\ H'$ by the value $C\ H'$. Divide this proportion by the value $A\ A'$ to obtain the value $A'\ B'$ as a line without any other quality than breadth. Diminishing the values thus, as Playfair does, the width $C'\ H'$ becomes *negative* as to value, necessarily, or less than *zero* in its effect. That is, the lines being taken at *zero*, as to breadth, and taken in their calculations of the sides of the polygons, *as applying to the measure of the curved line $A\ A'\ D\ H$* (reduced in its breadth $A\ A'$, *in pari passu*), must, necessarily, as a practical fact, *detract from the value of the curve.*

Such being the inevitable fact, resulting from assuming the definition of a line, to be equally applicable in this particular and especial case, with its use as applied in the admeasurement of plane areas, or magnitudes, Playfair's method is *defective* in the geometrical means employed: therefore his method is but proximately right, and his claim, that, by his method, he can ascertain the exact value of the curve to within less than any assignable quantity, *is false.*

As a resulting truism, the value of the curve of the circle, as worked out by the method of Playfair, *is less than it should be.*

Q. E. D.

Exeter, *December*, 1875.

NOTE TO PART II.

TESTS FOR CORRECTION OF THE RESULT BY THE PLAYFAIR METHOD.

(*a.*) By a peculiar method of test, John A. Parker shows in his Quadrature, Proposition III, Appendix, that error occurs in the sixth decimal place of the Playfair result.

(*b.*) Another test is as follows, presuming that though there is inevitable error in the Playfair method, that error is so small that it is to be found in a far off decimal: Take a disc assumed to be

perfectly circular, the greatest distance across it in a right line *must be* integral with relation to its bound of circumference, because the lines are *closed* with relation to each other. Since this is so, there is, and must be, in nature an integral number form which will exhibit or notate this perfect, and determined, and integral relation. Assuming that that form which will most nearly restore the Playfair result is one that will correct it, then the form

$$113 : 355$$

is that one which, divided by its least member, gives

$$1 : 3.1415929 + :$$

differing from the Playfair result in the seventh decimal place. That this result was anciently taken as corrective of this same approximate value, its presence in the Bible (as the first face one, underneath which the Parker form of

$$6561 : 20612$$

lies as the perfect one), sufficiently shows.

Besides the efforts of all the years of ancient research, modern efforts have failed for any other form which will give so close an approximate to the Playfair result as this of $113 : 355$. The efforts and experience of ages, therefore, as to trial for this, empirical though they be, should be of value in this investigation, and weight of authority should be given to this form.

But John A. Parker rediscovered the form

$$6561 : 5153 \times 4 = 20612$$

of which $113 : 355$ is but a modification, or, from which it is but a derivation : *because*

$$6561 : 20612 : : 113 . 355\frac{20611}{20612}$$

$$20612 : 6561 : : 355 : 113\frac{1}{6561},$$

while testing $6561 : 20612$ by $113 : 355$, integral results of this peculiar harmony will not appear in both proportions.

On the ground that shapes are obediences to number forms, as

mental creative conceptions, we have a perfect test as to which of these forms is the governing one in the proposition that the true relation of *circumference* to *diameter* is `4 times the area of the circle inscribed in the square for the value of circumference to the area of the containing square for the value of *diameter*, as has been shown. The form 6561 for area of square to 5153 for area of inscribed circle, gives under this rule integration of *diameter* to *circumference* as 6561 : 5153 × 4 = 20612, while no such result attends a like attempted use of 113 : 355. (Parker's criticism.)

These considerations (with the marvelous results as to the use of the form 6561 : 20612 as determining geometrical shapes and astronomical data of space and time as shown), seem to have great weight in determining what may be the true value of π, and what may be correction of the manifest error in the Playfair method. Attention is now especially directed to the Quadrature of the Circle by John A. Parker (John Wiley & Son, New York), for further light on this subject.

The following formulations are given, as arising from use of the number $3^2 = 9$, and as by their use exhibiting these three noted values of π.

$$\frac{20612}{54} = \text{standard } \frac{1}{2} \text{ base side of great pyramid} =$$

$$381.7037037037037$$

(1.) $$\frac{381.7037037037037}{121.5} = \qquad 3141594269166+$$

the Parker value of π.

(2.) From $\qquad\qquad\qquad\qquad 381.7037037037037$

deduct $\dfrac{81 \times 30}{81^2 \times 113} = \qquad 1638806948$

Remainder, $\qquad 381.7035398230088$

$$\frac{381.7035398+}{121.5} = \frac{355}{113} = \qquad 3.1415929+$$

or, the Metius value of π.

(3.) From   381.7037037037
     deduct,   2000000

         Remainder,   381.7035037037
     Add   37074

         Sum,   381.7035074111

$$\frac{381.7035074111}{121.5} = 3.1415926535897$$

or the accepted value of π to the thirteenth decimal place.

APPENDIX.

An illustration may be seen of a method of initial steps toward the re-
sults involved in the foregoing treatise. For terminology, let the cosmos
be considered as divided into the technical terms *heaven* and *earth*. Let
earth be 12, and *heaven* be 12, together $12 + 12 = 24$, and let this 24 be
divided into 360 parts of 15 parts each. Thus we have the terrestrial
and celestial circle of 360, or 24 hours, compassing the heavens and the
earth.

First Genesis says: In the beginning Elohim* (God) made *heaven*
($s\ m\ i\ m = 12$), and *earth* (a.r tz = 12).

Then the text says: And the earth (*aretz*) was T H V—V' B H V; which
words, because they have no contextual meaning, Aben Ezra says they
must simply be translated *idem sonans*, as T H V—V' B H V, implying an
occultism; (but Dr. Wordsworth has not added to the sublimity of the
Scriptures, by translating these words as *higgledy piggledy*).

The value of T H V is 4, 5, 6, and gives *the cone* from the *triangle* 3, 4,
5, to the side (page 27), from whence all the pyramid values have been
seen to spring, while V' B H V is 6, 2, 5, 6, or $6 \times 2 \times 5 \times 6 = 360$, which
with the use of the triangle gives, as has been seen, among other things,
the value of the exact solar day. Now preparing for a day God divided
the *light* part from the *dark* part, or 24 hours or parts, into specific por-
tions of 12 and 12, the natural division; then He divided, so the text, *be-
tween* the light and *between* the dark, or a cross division apparently arbi-
trary, but perfecting the typical square of 4 in one, and dividing the 24 into
4 equal parts of 6 each. Darkness was taken as an idea implying *female*,
and light as an idea implying *male*. So the day was divided primarily into
a *male* portion of 12 and a female portion of 12. Six (6) days finish the

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* Elohim is for one value 31415, or a *circumference* value, designating
the origin or ground method of circular construction: it can also be made
to signify in a correlative or cognate connection $401 \times 36 = 14436$, and
$144 \times 36 = 5184$, a characteristic of an origin form common for measures
of time and space, for 5184 is at the same time the characteristic of a solar
day in *thirds* and of the *square yard* in inches multiplied by 4.

cosmos: each day designated as an *evening* (*woman*), and a *morning* (*man*), together equaling *one day*. So there are in the 6 days a total of 72 hours *male* and 72 hours *female*, in all 144. Thus the number 144 is born by use of 12 and 12, or 24; and, indeed, $12 \times 12 = 144$.

It is said that God *as thus finishing* the 6 days of the cosmos, made A D M (the word used, to which the generic term *man* is here wrongly given by translation, nor should the word *man* be used in translation, until the close of the garden scene, where it first occurs); but this word is $A = 1$, $D = 4$, $M = 4$, or 144, or the very number completing the 6 days of the cosmos; for the 6 days, as seen, have together made 144, or A D M. He now commands them, that is, the *male* and *female* parts (so, in the text), into which A D M is divided, *to multiply*, and as correlatively, or cognately, the 144 has been divided into 72 and 72, then $72 \times 72 = 5184$, which equals the characteristic of the solar day value in *thirds*, just where it co-ordinates with linear measure, for $\frac{5184}{4} = 1296$, or 1 square yard: so that thence, as a common source (or the name Jared, or Y R D, or English *yard*), there may be a weaving together of time and distance measures as inter-connecting, and inter-interpreting.

Passing over the 7th day (as *empty*, or *nothing*, or *Hebel* [Abel], or a circle, which has no evening nor morning, showing a unit idea), the foregoing leads up to the *construction of the garden;* for it says: And God planted a garden in Eden, *out of the East*. Where East? East from where? It is not a geographical term, because it referred to no place of departure. The word is M' K D M, and is 4—144 (where K D M is the equivalent of A D M or 144). So God planted a garden in Eden composed of 4 squares of 144 each. Now since the words *gn-odn*, or *garden-Eden* equal for one value 24 (or $g = 3 + n = 5 + o = 7 + d = 4 + n = 5$ = a total of 24), and since A D M is a square area of 144, or a square of 12 for length of side, then 12 such lengths in a *higher denomination* as of feet for inches, will be the side of a square whose area is 144 square feet (in place of the A D M square of an area of 144 square inches), and 4 such squares of an area, each, of 144 *square feet*, put together will form a square of 24 *feet* to the side. Then these squares will show, first an area of 144 square feet, and 4 of them complete the garden, truly M' K D M, or 4-144; and each of these squares, while of 12 feet to the side, are also 144 inches in linear measure, for $12 \times 12 = 144$. Thus changing the A D M value from area (144 square inches) to linear measure (144 inches in length), we have an interior square (central) of 144 inches to the side, the nucleus of 4 others of the same dimensions, making an exterior square of 288 inches to the side (or 24 feet), or a total circumference of $288 \times 4 =$

1152, or I I N R (or place these letters one to each corner of a square and they can be read as I N R I). So, since this garden is seen to have its origin from 144, or K D M (or A D M, for this last is 144 also, and as a fact, the two words A D M and K D M give us the name *Adam Kadmon*, whence *emanated* the ten Sephiroth in Hebrew ,Kabbalism), when it is said that God placed the A D M, or 144, whom he had made in this garden, we can refer this placing to a central square of 1 foot to the side, or of an area of 144 square inches. Now construct a pyramid of 24 feet to the side, and *whose summit* shall be a square platform of 1 foot (or 144 inches area) to the side: multiply these values by 100, and the sides, of the base and summit, will be, respectively, 2400 and 100 feet. 2400 feet is *circumference* to a *diameter* of 763.9433+ feet, the *actual measure of the base side* of the great pyramid, and 100 feet will be a *circumference* to a *diameter* of 31.8309+ feet; which last, allowing for the finish, or pavement on the summit of the great pyramid, now removed, may be assumed as the *actual measure of the side of the summit platform* of the great pyramid (see Smythe's measures of same; roughly made about 400 inches or 33.⅓ feet). This would tend to show that the pyramid itself was in its finished state *truncated* instead of being carried up to a point. And this agrees architecturally with Christian kabbalism, or gnosticism, for Jesus,* or I H S, or ι η ς , was esteemed *the corner stone finishing a structure or dispensation*, and the gnostic value of His name was, for one value, taken as 318, or the numerical value of *diameter* to a *circumference* of unity [3.18+ is *diameter* to a *circumference* of 10, and Abel (Hebrew II B L = 5 + 2 + 3 = 10), who is (as Adam also) a prototype of Jesus, is in value 10, so that the I H S value, 318, notes a *diameter* to a *circumference* value of Abel or 10]; in other words, He was with the Gnostics the cap-stone of this very pyramid of the garden, and of Egypt, *as finishing it* with a cap, or corner stone, the base of which, as seen, is 31.8+ feet, or *diameter* to a *circumference* of 100. Both the garden and gnostic use, and their essential inter-connection, are to be clearly denoted by symbols, which once understood can never be dismissed from the mind as part and parcel of the Biblical scheme. The garden as a *square* of 12 + 12, or 24 feet to the side, or 288 inches, gives a circumference of the square of 288 × 4 = 1152, as designated by the letters I = 1, I = 1, N = 5, and R = 2; which letters,

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* It is passing strange, but while Jesus was the son of Joseph the *carpenter*, He was also the son of David: now D V D (Hebrew for David) means a *joiner*, thus *carpenter and joiner*, for architectural purposes, showing a building system in the very construction of the language, independently of its historical, or narrative, use.

placed one at each corner of the square, read I N R I (and $1152 \div 8 =$ A D M or 144, while $1215 \div 5 = 243$ or Abram). Make a cube of this garden of 24 to the side, and we have a cube of 8 cubes of 12 feet to the side each. But A D M, or Adam, is the center square or cube of 12 inches, or 1 foot, to the side, and therefore he is concealed in the very heart of the cube, thus:
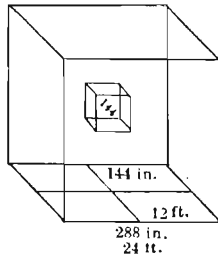
This is the *first* Adam; as placed in the garden. To display him, or take him from his concealment, *unfold this cube of the garden*, which, by so doing, becomes, *in display, a cross* with the man Adam exhibited as a square (or cube) of 144, as seen.
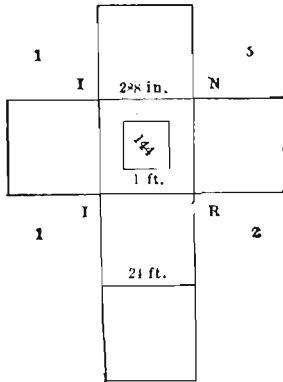
The letters I I N R. denoting the edge measure of the garden multiplied by 4, to give circumference of the larger square, or 24 feet = 288 inches $\times 4 = 1152$, are found located one at each corner of the square of 24.

The Gnostics denoted this the *second* Adam; but the scheme is a perfect answer to the Hebrew scheme of the first Adam in the garden.

Now since the ideas as to the cosmos were the same with the Hebrews as with the Egyptians, and since their sacred measures were the same (as is provable from the details of description of the Temple on comparison

with the pyramid measures), and included the inch, foot, yard, and mile;
and since all the structures of the Bible, as the Ark, the Tabernacle, the
Encampment, and the Temple, are but orderly developments from a *B'ra-
shith* or *Beginning* (the real term for the book of Genesis), we can cer-
tainly look upon this use of $12^2 = 144$ inches, scaled to 144 square feet, as
the simple beginning of an entire system, more and more completely de-
veloped as progress is made in the books of the Law; and then made use
of in Temple construction, and for reference to, by Ezekiel.

The similitude between the Garden of Eden and the pyramid is unmis-
takable in these initial steps; which once taken, a great variety of further
steps of development are made use of, all pointing to the primary use of
the forms 113 : 355 and 6561 : 20612. For instance: A D M, as seen, is
taken as the square area of 12 to the side. After the woman has been
created in this prepared garden, Adam says of her: She shall be called
woman because she was *taken out of man.* Here the word for *man* is not
A D M, but A I S, a word designative of something from whence *the
woman* could be produced. This new word reads A = 1, I = 1, S = 3, or
113, or *diameter* to 355 as a *circumference.** Use 113 as a square area as
we did A D M, then the side of its square will be $\sqrt{113}$, or a square of
10630+ to the side, or this is the side of this *square man.* The woman
was taken from his middle, or side, or loin, and $\dfrac{10630}{2}$ gives his half, or
middle, and we have, by the division, 5315, which, in Hebrew, reads
H' A S H, or *the woman.* These values are for various uses in determin-
ing combinations: among them place these figures, one to each corner of
a square, or

$$1 \quad 5$$
$$3 \quad 5$$

and we can read 5153, which is the area of the circle inscribed in the square
area 6561. So, also, the *full* values of the letters of the words *garden
Eden* or *gn-odn*, are $g = 3 + n = 50 + o = 70 + d = 4 + n = 50 =$ a total
of 177. Now the cubic value is 5.153 feet divided by 3 = 1.71766+ feet,
10 cubits are 17.1766+ feet. The surface area of *a cube of* 10 cubits to
the edge is 1770+ feet; so that the garden is also significant of a reduced
value of the *holy of holies,* which was a cube of 10 cubits to the edge; as,
also, the width north and south of the queen's chamber in the pyramid.

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* In modern times the discoverer of this quadrature value 113 : 355, is
said to have been *Peter Metius;* but this seems to have been a *nom'de
guerre,* because the words signify *the measuring stone.*

Again, the number 9 is prominently suggested.

While A D M is 144, we can take this value as $1 + 4 + 4 = 9$. The word A S H, woman, or 135, can similarly be taken as $1 + 3 + 5 = 9$. The *serpent* is the letter *teth*, or a serpent coiled with its tail (*spike* or *phallus*) touching the opening of the mouth (*yoni*) and the letter *teth* stands for the number 9. So Adam, and the *woman*, and the *serpent*, are one in the center of this garden, as the number 9. Sharpe says the hieroglyph of the letter *gimel* was a serpent erecting its head *through* its coils, a copulative symbol; *gimel* stands for the number 3, which, *multiplied* by itself, the copulation, will produce 9, which, in turn, is the square root of 81. The *tree* was *o-tz*, or 7 and 9, as to which 7 is a female number, and 9 a male number; and $7 \times 9 = 63$, or reversed, 36. $36^2 = 1296$, and $1296 \times 4 = 5184$. And so on.

The orderly arrangement from *B'rashith*, or *Beginning*, seems a description, then a diagram, as of the garden; then an explanation and preparation for a succeeding diagram in the ark of Noah, where, just preceding the diagram, the full and even detailed measures of the Egyptian pyramid are given. (See " Note " at close of Appendix.) Then follows a preparation for a further development under Abram, and Lot, and Sarah, and Isaac, and so on, closing with Jacob and his sons in Egypt. Then a further step explained in diagram by the Tabernacle and the Encampment; and so on.

Instance: Abram is 243, the ½ standard height of the pyramid, taken at 243, because this is *diameter* to 763.4074074+, which in feet is the standard length of the base side of the pyramid. Make 4 squares of 243 to the side each, with 4 inscribed circles of a *circumference* of 763.+ each: put these 4 squares together, and we have a large square of 486 to the side, the standard height of the pyramid; while the circumference of the 4 inscribed circles give the total length (*standard*) of the circumference of base of the pyramid. (The name *Abraham* gives further detailed measures, as of the king's chamber.) To get the *exact* value of the measures of the pyramid we had the change from 20612 : 6561 to 64800 : 20626.47001+. Now the name Abram giving the ground, or *standard* form, the name Lot gives us the correlative *exact* form, for Abram being 243, the ½ of 486, Lot is L V T or $36 \times 9 = 324$, and 324 is the ½ of 648, the source of the exact measures of the pyramid as to its outside, and elsewhere, in contrast with the other form under Abram. (Both values are brought *together*, when Moses says: Because the people come unto *me to inquire of Elohim;* where the word is L' D R S, or 3-42-3, showing either 342 or 324.) And so on.

The Hebrew word *Luz*, the foundation of so much kabbalistic comment,

means to *pervert*, to *say*, or to designate one thing an mean another, to invert or turn end for end. Its value is 3, 6, 7, and inverted it is 763, showing the index of standard, and exact, value of base side of the pyramid. And this 763 is itself a perversion for 2400, because it implies a *diameter* to a *circumference* of 2400. The word is taken in connection with a *bone* said to be in the body of *man* (113), or Adam (144), which is indestructible, whence new life must always spring. *Bone* is a form of the word for *tree* in the garden, for one is *otz*, and the other *otzm*. *o-tz* is 7 × 9 = 63, or inverted, or perverted, 36; and 6336 is the mile value in inches; while *otz-m* may be taken as 36² or 1296, one square yard, and the ¼ of 1 solar day in thirds, or as 36 × 4 = 144 or Adam. In short, the use of these catchwords refers to the *everlasting duration* of the system to which they are may to refer.

L V Z or *Luz* is 3, 6, 7: Add 3 + 6 = 9, then from L V Z we have 7, 9, = *otz* or tree in the garden; append final *mem*, or square *m*, and we have *otz-m*, or *bone;* showing that the word *bone* is thus a growth from *Luz*, involving the values of the word *tree* in the garden.

In this connection, I H V H is the *tetragrammaton;* its value reads from right to left 56501. This is a form of 113 *diameter* to 355, for 113 × 5 = 565, and this can be placed in another form of 56.5 × 10, meaning this word. But to show another use take the same form as being multiplied from the other end, or 1065 × 5 = 5280 or the number of feet in a mile.

The containment by the Bible of this system is in no manner a disparagement to it in any possible point of view: to the contrary, if this system of exact science (call it so) is natural and divine, then indeed the Bible at last can be found to contain those exactitudes of Divine workmanship which can not be interpreted but in a common way: therefore a great light and no confusion of interpretation.

A language thus displayed as containing a number system, and its orderly development through to the completion of a most perfect unfolding of the cosmos as an obedience to, or materialization of, Divine thought, brings up the question was it (or is it) possible for men to so construct a language, that it should answer all the ordinary purposes of a language, and all its extraordinary uses, as in couching the most wonderful poetry of the world's duration, while it could, in harmonic unison with historical use, narrative use, familiar social use, and poetic use, blend in a fully developed, numerical, mathematical, geometrical, astronomical, and cosmical system of exact enunciation? Truly it bewilders one.

יהוה ידאה

NOTE TO APPENDIX.

The Adamic chronology ends with Lamech and Noah, then the text proceeds to the preparation of the ark. The last two verses (*Gen.* v. 31, 32) seem to determine the measures of the pyramid in another but an equivalent set of measures than those used in the garden. The Hebrew reads very perculiarly (besides from right to left), in such form that a different value will be read from left to right. It says: And all the days of Lamech were (*sic* from right to left)

(years) hundred one seven and (years) seventy and seven.

$$\begin{matrix} 1 & 7 & o7 & 7 \end{matrix}$$

Read from left to right, the cipher becomes meaningless, and the values read.

(1.)   1777.

It then says: And Noah was *Ben Chomesh*, or

son of 5;

that is, his letters are *N—ch*, or 5—8, which is 8 cubes of 5 to the side, equals a cube of 10 to the edge; the object being to show that he is a unit of measure, founded on the number 5. But as *son of 5* he *is* 5, which value we can use for his name, as we can the number 3 in place of the names of his sons. It reads: "Noah was *son of 5, one* hundred (years), and Noah (5), begat eth Shem, eth Cham, and eth Japhet;" that is, he begat 3, that is, Shem, Ham, and Japhet. So reading the sentence from right to left, for the characteristic numbers denoted, and we have

$$\begin{matrix} 3 & 5 & 1 & 5 \end{matrix}$$

which arrangement discovers

(2.)   5153

But take the three sons as mentioned, and we have (from right to left)

Shem,	M	S
Ham,	M	Ch
		I
and Japhet,	T P	V

Substitute the values of the letters, in the same order, and we have

(3.)   4   3

                   4   8

                          1

                   4   8   6

Again: Noah was 600 years old. He was the son of Lamech; and the
years of the world to the begetting of Noah, were   1056
Then adding the 600 of Noah,   600
                                                                    _____
                    Sum,   1656
where we have, by reverse reading,

(4.)   6561

Again: 1056 is the $\frac{1}{5}$ of one mile, for

$$1056 \times 5 = 5280$$

which shadows out the value

                    10 5 6 5
                    I H V H

or the *Jehovah* value as a measure.

In (2.) and (4.) we have 6561: 5153 the source of the pyramid.

In (3.) we have 444, 381, and 486, and in (1.) we have 1777.

Now the pyramid in circumference of base is 1777 *cubits;* in length of
side of base it is 444 *cubits;* and, also, in length of side of base it is 381
feet multiplied by 2; and its height is 486 feet.

Thus, in development, we see a passage from the use of the number 12
used in the garden, to *feet* and *cubits*, with the source of 6561 : 5153; be-
sides, also, the other form of 113 : 355, which is contained also in these
verses, but more obscurely.

It was presented to the inner vision of Emanuel Swedenborg, as re-
gards correspondences, that in the unseen, as here, the Hebrew holds the
same rank as a language; it being there especially the vehicle of Divine
teaching. It was shown him as to its uses, that it is understood, or read,
agreeably to the rank of the heaven. In the lowest heaven it is received and
appreciated in its simple narrative form, or aspect; while he says, as some-
thing strange to his understanding, in the innermost heaven it is read as
*consisting of numbers which, in infinite but harmonic arrangement, teach
the Divine constructive process of the entire universe.* He furthermore
says, that it is there the love and delight of the angelic hosts to acquire
from the contents of the Divine Book (in Hebrew), *as numbers*, the men-
tal constructive designs of the Creator. This communication, strange to
his apprehension, not familiar to his culture, abruptly injected, as it were,
into his thought, he simply enunciates as a memorable and strange teach-
ing. The instance stands out, as far as the author can gather, as phe-
nomenal in all Swedenborg's writings, as a matter utterly *de hors* his

natural cognitions, or possible conceptions. Such, being the case, we, to a certain extent, find that however he came by the enunciation, he was speaking of just that property of tne language, which can be asserted as, not a possibility, but its discovereo *real characteristic* in the Hebrew Bible, in the uses of its terms, at the same time linguistic and numerical. To the author's comprehension, coupling the present discovery of Biblical use, with Swedenborg's assertion made over one hundred years ago, there arises a most remarkable test of the spiritual illumination of Swedenborg *necessarily*. The matter grows stranger when, in these present discoveries, very learned Jews recognize the long lost keys to their ancient Kabbala.