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STANDARD

A MAGAZINE

DEVOTED TO THE DISCUSSION AND DISSEMINATION OF THE WISDOM CONTAINED  
IN THE

GREAT PYRAMID OF JEEZEH IN EGYPT

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All in favor of advancing truths most absolute, as portrayed in the revelations of the Great Pyramid of Egypt, and of the success of the Society in preserving inviolate the Anglo-Saxon weights and measures, will kindly communicate with the President, by whom also subscriptions, donations and communications will be gratefully received.

THE INTERNATIONAL INSTITUTE

FOR PRESERVING AND PERFECTING THE ANGLO-SAXON WEIGHTS AND MEASURES

CLEVELAND: 64 EUCLID AVENUE



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Born in city of Dublin, Ireland, 1822, hypothetical discoverer of the mysterious Mes-  
sianic date line 2,170. Deduced from Robert Menzies' thesis, and demonstrated by the  
laboriously accurate test measures of C. Piazza Smyth.—See 'Our Inheritance in the  
Great Pyramid,' pp. 465-470.



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# THE INTERNATIONAL STANDARD

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NOVEMBER 1884.

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## PRESIDENT BARNARD'S ATTACK ON THE GREAT PYRAMID METROLOGY.

COMMENTED ON BY C. PIAZZI SMYTH, ASTRONOMER ROYAL FOR SCOTLAND, AND AUTHOR OF "OUR INHERITANCE IN THE GREAT PYRAMID," "LIFE AND WORK AT THE GREAT PYRAMID," AND "NEW MEASURES OF THE GREAT PYRAMID, TESTED."

After a long interval, during which any mere accidental errors in the earlier portions might well have been corrected, the third part of the Very Reverend President Barnard's discourse on the Great Pyramid Metrology, in the Columbia College's "School of Mines' Quarterly Journal," has reached me. And as I have now read it carefully, equally with its predecessors, the time seems to have arrived for saying something of how I find it.

Its first portion, you may remember, appeared in January, the second in March, and now the third in May, 1884; and the three mount up altogether to nearly a hundred pages. It might naturally, therefore, have been expected that so bulky an article,—coming from one of the mature age and dignified standing of President Barnard, of scholastic reputation in past years as a physical mathematician, and, if I am informed aright,

a fully ordained clergyman of rather pronounced High Church proclivities, as well as the chosen ruler and chief example to the students of Columbia College,—would prove to be a very important contribution to latter-day Great Pyramid literature.

Such, however, is unhappily far from being the case. For, just as always happens with any smaller men venturing to ridicule a subject before they understand it, and then falling into grievous errors, so even the very learned and Reverend President Barnard having, with but little knowledge of the Great Pyramid's metrological theory, undertaken to abuse and denounce it for a purpose, he makes so many mistakes or misstatements, and some of them of the first magnitude, that there is little or no force in his essay after all for those who have already studied the subject. He simply shows us the saddening spectacle of an old man blindly caring very little for either what words he uses or what sentiments he expresses, only so that the Great Pyramid metrology shall be very effectually stamped out of all recognition, and nothing connected with it be ever again allowed to form a serious obstacle to the American people, at his advice and suasion, giving up their hereditary Anglo-Saxon metrology, and enslaving—emasculating, a recent writer calls it—themselves in deference to the utterly foreign and most unsuitable French metrical system.

If the attack had only been plain and straightforward it might well have been left to sink or float on the stream of public opinion, as its merits or uses might deserve. But there are so many most tortuous accounts of important matters of fact; and wherein, too, I have the distinction of being professedly quoted and held up to scorn as the peccant authority—that some, at least, of these cases should be unravelled, if only to warn ingenuous readers that for anything crucial I may have written on the Great Pyramid subject, especially as touching its most advanced and latest published features—they should refer to my own words, and never trust Professor Barnard's versions of them.

Even as to date, so all important in a subject gradually unfolded during the last very few years and still unfolding, the President quotes only from the second edition of my 'Inheritance in the Great Pyramid,' actually calling it, however, in

1884, "the new and enlarged edition," though it was published to his own knowledge so far back as 1874, while the third edition, almost re-written and much extended, had appeared in 1877; and the fourth, still more increased and improved, in 1880.

But far more deeply disappointing was it to me to find the Reverend President taking up the scoffing sneer of a vulgar and I fear infidel author, and calling my whole scientific research into the facts and history of the Great Pyramid, on the lines opened up by the late John Taylor, "the Pyramid religion" (p. 108); "the Pyramid faith" (p. 108); "dogmas of the Pyramid religion" (p. 300); and speaking of some other plain-working and God-fearing men in science as "the Pyramid religionists" (p. 107); "preachers of the Pyramid faith;" "devotees of the Pyramid faith" (p. 309); and "the apostles of the ancient Pyramid faith" (p. 329); while he pretends to be very restive and indignant at "the doctrine preached to us by the disciples of the Pyramid faith" (p. 212). In fact the continued misuse for a contemptuous purpose, through all three papers, of words considered sacred among all Christians, makes one wonder distressfully at last what sort of ideas of religion itself President Barnard can possibly have. Not very Biblical it would seem, for on his opening page he assumes the history of Adamic man upon earth as wholly an affair of his own voluntary, spontaneous, unaided effort, whereby he raised himself from the lowest stage of savagedom into civilized life and high mental attributes, or in total contradiction to what the Bible says of it. And with similar want of agreement with revelation, on his fifth and sixth pages, the president alludes to the duration of Noah's life after the deluge as though it had been a span of a few days only, while the Biblical chronologies make it extend to any period between three hundred and fifty and twelve hundred years.

Hence to tell such a one that he is profaning the name, objects and character of "religion" to apply it sneeringly to a subject with him of scientific enquiry only, and which has never been brought forward as a "religion" by those who have studied it; has never been hinted at by them as a method of salva-

tion; never spoken of as a mode of approaching God for the forgiveness of personal sins, nor intended in the slightest degree to alter or supplant a single item in the Gospel of our Lord and Saviour Jesus Christ, though it may, and has most unexpectedly brought to light, remarkable corroborations of some of the primeval divine inspirations in earthly wisdom from God to man. Inspiration in this case afforded apparently to one of the earliest Hebrew prophets a grand existency in those times, and once temporarily in Egypt, but antagonistically to the Egyptian idolatry there. To speak, however, I repeat, of the real characteristics of true religion to such a one as the president shows himself to be throughout his three discourses, is to speak to a merely dry schoolman who, in spite of any amount of such learning, remains and ever will remain entirely unappreciative of the very fundamentals of our blessed Christianity.

Contenting myself, therefore, with a simple protest against President Barnard's continued profanations of the word "religion" and whatever is connected with it, I proceed to examine, at rather greater length, some of his misrepresentations of those scientific numbers and facts on which the inspired, long-concealed and anti-Egyptian principles of Great Pyramid metrology rest, for some of its most unexceptionable proofs.

These numbers and facts having been largely obtained from the ancient monument, and first published in numerical form by myself, it seems a settled object with the president to invalidate me as a measurer, reject my measures, and then present the Great Pyramid metrology to his readers, without any of my doings mixed up with it. That, too, is perhaps allowable and understandable enough as a method of war; though I must even then regret that careful mensurations of important parts of the monument, not yet measured by any one else, are not to be allowed to appear any more before the world, because forsooth President Barnard has chosen to object to the person who made them, for reasons of his own invention.

Yet why, after that, does the president next run the same person down with equal or even greater vehemence, for *not* having made measures of certain other parts of the Great Pyra-

mid? Such illogical inconsistency is almost incredible; yet, towards the end of his first paper, the president occupies no less than three pages with bitterest invectives against me for not having, with my own hands, measured the base-side length of the Great Pyramid in 1865. He paints an ideal picture of my having had unlimited time, money, instruments, men and whatever was necessary for making that measure; and thereby, according to his previous harangue, of inevitably vitiating the stream of Pyramid knowledge at its fountain head. And yet I did not do that mischievous thing. But now, precisely because I did not, he accuses me again and again of being absolutely "unpardonable," and even infers that there must be something particularly black about the omission.

Seeing, however, that I went out to the Great Pyramid on my own private idea alone, at my own private expense, on a limited leave of absence from my duties at home, and with no more funds than the little I could squeeze out of my miserable salary of £300 *per annum*, it was rather a wonder that I could go out at all and do anything in that expensive region. But at least I was my own master to choose what I would do myself, and what I would leave to others in a work far too large for me to contemplate undertaking the whole.

Now, in making this choice, I was largely guided by what other explorers and measurers were taking up at that particular time. Wherefore, if the president, waxing still more condemnatory of my having omitted to make that base-side length measure myself, seeks to justify his condemnation by adducing this further fact that, in his own words, "two engineers, Aiten and Inglis came to Gizeh when I was there to make that very measurement," and did make it "with a thoroughness of which there had been no former example"—that was exactly why I kept on working at the other subjects I was engaged on, and did labor at, every moment of my time, until the day of my forced departure. For is not division of subject as well as labor, a recognized method everywhere for enabling a few workers to gather in an extensive harvest? Or, if I am to be of no authority upon the Great Pyramid because my own measures there, though numerous enough according to the



president, to fill a volume, did not include one of the base-side length, of what standing is President Barnard, who has never measured anything whatever of the mighty monument, and has not even seen it?

The president, however, is not quite right in saying that Messrs. Aiten and Inglis measured the Great Pyramid's base-side length under my very eyes, for they came rather when I was leaving, made their chief measurements after I was gone, and communicated the results to me only after we were all returned to Scotland. More decidedly, too, is the president wrong in insinuating (p. 117) that I called them "blundering engineers," and declared their measurements to be "to my disgust." Those are *his* choice phrases, and I leave them to him to explain whenever Messrs. Aiten and Inglis may call him to account.

For myself—although more accurate measurings have been taken since then by several parties—I consider Messrs. Aiten and Inglis' result a most important step, very happily made at the time it was, towards the discovery of the truth touching the Great Pyramid's base-side length as intended by its ancient architect. Previous to their visit, the only *socket-defined* measures had given (in British inches) 9164 and 9168, or something like these numbers; and nothing less than 9160 with some few units appended, could be admitted. But when Messrs Aiten and Inglis announced their mean result to be 9110, and the Royal Engineers gave out 9130 a few years afterward—it was evident that with due scientific regard to all the measures taken on the ground, and the principles of discussing such observations afterwards—no result so high as 9160 could be entertained; nor, again, any so low as 9110, but that the truth should lie somewhere between; and I came, moreover, early to the conclusion of 9140 being the true quantity to the nearest whole inch. Yet on this point also is poured forth once more the wrath of the president, who, overlooking that before I theorized on them I had printed Messrs. Aiten and Inglis' simple numerical results so faithfully and fully that those able engineers were content with that publication; and overlooking also that it is the universal practice of all scientific men, when taking

means of discordant measures of one and the same quantity in Nature, to assign weights to the different results if they know of any causes which should make one more, or less likely to be truthful than another—the president, I say, inveighs against me for having arrived at that number, 9140—when it was neither the simple arithmetical mean of all the quantities taken as of equal weight, nor was it any one of the quantities taken by itself alone, as absolutely exact and without the smallest reference to the others.

To all which taunts I can answer most conscientiously, “Of course not !” And though the president comes out soon after with a further evil insinuation, that the 9140 was brought out “because it was wanted,” but that it ought to have been 9140·176045, a futilely, hair-splitting expression worked out by himself, and of which only the first decimal place is likely to hold for more than a few years. I must now leave this over-long subject of the base-side length of the Great Pyramid, for it will come up again in another place ; and meanwhile we have the president’s diatribes on both my measures made, and theoretical explanations published, for the size of the coffer, inside of the Great Pyramid,—to notice.

This coffer subject is taken up chiefly towards the end of the second, and beginning of the third, part of the president’s essay.

That very little reliance, in his opinion can be placed on my measures there, the president (p. 294) implies, not from any new discoveries of his, but merely from my own numbers, purposely published by me long ago, to exhibit the discrepancies of different methods, but yet the convergence of certain commensurabilities ; as thus, for the capacity of the coffer :

From direct interior measures,	71.317	cubic Pyramid inches.
From exterior measures, halved	71.160	“ “ “
From seem of bottom and sides,	71.266	“ “ “

He allows, however (p. 213), that “the contents, by different methods, vary from a little above to a little below 71.250 cubic inches,” but makes it his chief contention that my theoretical explanation of that quantity is obtained by using false numbers. I had looked on it as the tenth part of the cube of the ten-

millionth of the length of the earth's polar axis in inches, multiplied by the mean density of the earth expressed in terms of water. And that the president allows is not wrong in itself, but only in the flagrancy of my having taken (as he is bold enough to aver) a value of the axis of the earth divided by ten millions (viz., 50.05 British inches) "which no computer has ever found," and a number expressive of the earth's density (5.7) "which no investigator has ever reached."

Yet what investigators have reached in this latter subject, even as given by the president in another paragraph, has varied from Cavendish's 5.32 in the last century, to Airy's 6.56, in the present! But considering the late Mr. Baily's quantity of fifty years ago more probable, and calling it 5.66 instead of the 5.675 at which Baily announced it, President Barnard finds my Pyramid-derived quantity of 5.70 too large by 0.04. Why, however, when he is writing for the youth of his country, in 1884, does he not quote the latest and best authority in all physical science, viz., Mr. Joule, in the Royal Society Proceedings for 1878, bringing out from new experiments of a grand order, the number 5.69, or only 0.01 less than my Pyramid quantity. And seeing that so eminent a scientist as Sir G. B. Airy had previously brought out a number 0.86 larger, the Pyramid result of 5.70 cannot be said with any truth to be too large beyond all precedent.

But touching the earlier element in the coffer calculation, viz.: the ten-millionth of the length of the polar axis of the earth, in British inches, it is quite true that I had used that quantity as being 50.05 long, whereas the president of Columbia College now pronounces it to be only 49.273 of the same units in length; and then, cubing that terribly smaller number instead of the larger one, and multiplying the result also by his small version of Baily's earth density, in place of the Pyramid quantity, he brings out for the final theoretical contents of the coffer, on my lines of explanation as he tells his readers, only the miserable 67.865, in place of 71.464 British, = 71.250 Pyramid, cubic inches.

No wonder, therefore, that he denounces this 67.865 number,

in its littleness, as "a disgraceful break-down of the *rationale* of Professor Smyth's process!"

But is the president, in arriving at it, any more correct in his 49.273 number for the ten-millionth of the earth's axis of rotation than he was with his 5.66 for the earth's mean density? For authority he refers to his own previous statement in another part of his paper, giving the last five, and supposed best, computations in the whole world of the length of the earth's rotation axis, derived from arc of the meridian measures, and then he quietly takes 49.273 as the ten-millionth part of the mean of them all.

But, on referring ourselves for the full, original numbers to his page 122, we find given there, for the length of the earth's polar axis:

By one authority = 500, 489, 604 British inches.  
By another authority = 500, 504, 818.9 British inches.  
By another authority = 500, 491, 440 British inches.  
By another authority = 500, 487, 768 British inches.  
By another authority = 500, 490, 432 British inches.  
And by another in a note = 500, 532, 230.4 British inches.  
By another in a note = 500, 550, 410.4 British inches.  
By another in a note = 500, 369, 956.8 British inches.

And how, out of all or any of these quantities actually given by himself, the learned president of Columbia College can get 49.273 as the ten-millionth part, must be a matter of astonishment to the world and of grief to his friends. For, whether it be by a blunder or a perversion, the error is huge enough to throw modern science, as represented by President Barnard, back through the ages two hundred years at least, while it leaves my Pyramid quantity of 50.05 absolutely untouched and irrefragable so far as it goes.

Another class of misstatements and asserted detection of error in the Great Pyramid theory as held by others as well as myself, is illustrated by what the president writes of temperature. He begins by erroneously assuming that they all allude, in their standard quantity, to the mean temperature of the entire surface of the earth, on which hypothesis of his own he concludes their 68° Fah. to be much too high. Yet they had particularly confined themselves to permanently man-inhabited

latitudes, signally excluding therefrom the circumpolar portion of either hemisphere; wherein (see Job xxxviii, 22-23) God has laid up his stores of cold, and which, though man desires to break into, he has never yet succeeded in reaching. For though he has been for centuries sending thither expedition after expedition of ships, men and money, each of them has failed, stopped half way, and on its return—even down to the barely recovered survivors of the last party just snatched from the jaws of a miserable death, in the present year—it brings back more and more appalling accounts of hardships, obstacles and impossibility to man.

And again, while the president chooses to contend that the region of lower Egypt, having a higher mean temperature than  $68^{\circ}$ , prevents the Great Pyramid representing that quantity, the Pyramid students have always been particular in pointing out that the Great Pyramid does not stand in the low country of lower Egypt, but on the table-land of the desert to the west of it, where the temperature is sensibly less, while the critical quantity of  $68^{\circ}$  is considered even there not to apply to the level of the ground, but to the elevation of the king's chamber above it.

But if there is any one part more than another of the Great Pyramid theory which all its students and illustrators have been agreed on for many years past, it is, that the mind which directed its architecture to embody certain deeply significant numbers, weights and measures expressive of the earth's cosmical relations, was Palestinian and Hebraic, not Egyptian; and its purpose not for contemporary instruction to any one, and least of all, to the rebellious idolatry of Egypt, but to serve the future plans of God, and to come out as a most unexpected sign and witness to him (see Isaiah xli, 19-20) during the latter, *i. e.*, these present, days of the earth. So that, for the success of its high intentions, the hidden nature of the one Great Pyramid in, but not of or pertaining to, Egypt, was necessarily concealed from the people of that land. Yet, says the imperturbable President Barnard, when there is not found upon any Egyptian building a single inscription to tell the Egyptians that the Great Pyramid was erected for such a purpose, how can we believe? it

This ejaculation of the president's may be left to answer itself in the present age, and in the homes of every Anglo-Saxon Christian community, where each earnest enquirer has something much better to guide him as to the history of the God of Israel's dealings with his chosen people, and his preparations for the Christian era "from the beginning of the world," than any inscription ordered to be painted upon the buildings of their own days by the Pharaohs of old Egypt—the authors of those colossal idols which God declared should bow down, and they have done so.

Nor are the very curious details of modern practical science, in its newest laboratories, any safer guides to those who would reverentially seek to become acquainted with the ancient messages of inspiration from God to man. So that when President Barnard describes all the little tools and nice materials, the glass plates, microscopes and delicate balances of a modern weight-and-measure making workshop, and finding nothing of them but only the gigantic coffer vessel in the king's chamber of the Great Pyramid, declares that that cannot have been intended to be a vessel of accurate capacity measure, or to illustrate any high principle connected therewith, we feel inclined to ask him how much he finds about priests' vestments, wax candles, altar cloths, painted windows and the thousand-and-one of ecclesiastical adornments which High Church clergymen of his class deem so very important, in the New Testament? And yet that inexpressibly Holy Book contains all that is necessary to the salvation of man, and has altered the face of the world in establishing the Christian religion thereon.

But worse follows when the president employs the magnificent powers of the learned mind with which he has undoubtedly been gifted, to raise up mystifications of dates out of profane story to confound the chief dates of sacred history. Or when he resuscitates undoubted idolatrous and artistical architecture, as that of the Temple of Ephesus, to compete with the purity of, and New Testament allusions to, the Great Pyramid's peculiar points of symbolization and construction. But so self-satisfied is he with his own performance that—deeming he has now entirely suffocated the Great Pyramid theory under his



heaps of sarcasm, ridicule and misstatement—he actually suggests, with sneering charity, that the poor Pyramid students should henceforth take up and work out the heathenish views which he has just suggested to them.

The said students of the Pyramid, however, so far as I know anything of them, would much rather that President Barnard should work out his own theories, and be left to stand before a higher tribunal than man's. While it might be wise in him to allow conscience and public opinion to speak and answer the question: Is it becoming in one who professes to be a teacher of the Gospel of Christ to deride those who own no other Master than the Lord Jesus Christ, and to put heathen gods and goddesses as teachers and examples before men?

In what lowest deeps, however, are there not deeper pits still. For the third section of the president's attack concludes with a notice of Mr. Flinders Petrie's book, out of which he picks that particular part of the base-side length discussion touching the Great Pyramid, which is computed on the assumed level of the pavement piece near the middle of the side, and makes it, at that elevation, only 9068.8 inches. This quantity the president presents as the only result, so that, positively concealing everything else which both that author and all other Pyramid measurers for a long time past have had to say with regard to the original and Scripture-justified base-side length depending on the sockets cut into the rock at a lower level, and reaching there in one case to more than 9139 inches in length, the "Very Reverend" President expresses himself thus:

"The form of the base is sensibly square. The side of this square has been hitherto the unknown quantity in the Pyramid religion, but it has been a fundamental article in the creed that it should measure just 9,140 British inches. By the inexorable laws of trigonometrical science it is proved to measure, in fact, only 9068.8 British inches. With this determination the beautiful union of the sacred cubit and the length of the tropical year melts away into the air, to be heard of no more among men."

Than such a sentence as this, wilful perversion, misstatement

and concealment of facts, can no further go. Happy for us that it is found, not in the papers of any of the members of the International Institute for Preserving and Perfecting Anglo-Saxon Weights and Measures, but in those of a would-be enslaver of his countrymen to the atheistically introduced French metrical system. An aged man, whose gray hairs might well have led to better things, but like most aged men so prone to live in memory of the past that he evidently is not yet awaked to the newly discovered glorious destinies of the Anglo-Saxon race, the coming "Heir of the World," under the divine promise of old, and with no longer therefore any need—as in times of ignorance, poverty and scanty numbers now happily passed through—to Frenchify itself in order to rise to the greatest heights and privileges of civilized man, in allegiance to Almighty God alone.

C. PIAZZI SMYTH.

P. S.—The foregoing paper was written by me several weeks ago, when in the country; but having now returned home and looked over the INTERNATIONAL STANDARDS, Cleveland *Plain Dealers*, letters and books accumulated by post during my absence, I find therein much that is both confirmatory of, and supplementary to, the general views arrived at. Thus:

(1) Mr. Astronomer Baxendell, of the Observatory, Southport, in England, shows in the important matter of the Pyramid's *versus* Modern Science's, sun-distance, that President Barnard both misquotes and misrepresents the numerical quantities already introduced into his pages, over and above leaving out others which ought to have been mentioned, with the effect of making white in so far appear black, and black white.

(2) The admirable papers of Rev. H. G. Wood, Sharon, Pa.; of Mr. C. Latimer, Mr. Dow, Mr. Beswick and other good writers on the *socket-defined* base-side lengths of the Great Pyramid in addition to and extension of the *pavement-surface* base-side length, make the total exclusion of the former from all mention by President Barnard more extraordinary than ever.

(3) A truly grand paper in mathematical physics by the learned Professor Pliny E. Chase, of Haverford College, Philadelphia, shows that the earth is the harmonic centre of condens-

ation for the harmonics of the whole solar system reaching even to the stars, by reason of its being the largest of the very dense planets, and from "its orbit traversing the secular centre of the belt of greatest condensation."

The mean density of the earth is therefore an affair not only of terrestrial but of cosmical importance, and is found, in the Great Pyramid metrology, to be worthily and appropriately introduced as the foundation of its system of measures of weight, while in the unfortunate French metrical system it has escaped notice altogether, and nothing but the density of water is referred to there, as though our solid globe of the earth consisted of nothing but water, and its inhabitants were fishes only.

(4) Finally the rapidly opening fortunes of the Anglo-Saxon race, trusting to God and itself, are admirably set forth in Lieutenant C. A. L. Totten's weighty and spirited book on metrology, dedicated to "The English-speaking Peoples of the Earth, who already possess the world's gates of commerce, who raise its food supply, lock up its surplus, and conduct its trade; who own its mines, coin its money, and control its industry; who invent its means of progress, cultivate its intellect, and elevate its religion; who tone its morals, liberate its inhabitants, and stem its tide of errors."

The reason of that remarkable outcome in this latter day is shown week by week in the *Banner of Israel*, (*i. e.*, the descendants of the ten tribes, not the Jews) to be due to the primeval promises of God to Abraham, and the commencement of the long appointed recovery of God's chosen people, who have been so long lost to the world, but who are now entering on the promised blessings, as Christians in heart and soul and missionaries of the Gospel of Christ our Lord.

C. P. S.

EDINBURGH, August 20, 1884.

## THE IDENTITY OF THE ANGLO-SAXONS WITH THE LOST TEN TRIBES OF ISRAEL.

In the illustration of this subject the design will be to show that the perfect fulfillment of the promises made to Abraham, to Isaac and to Jacob is found in the Anglo-Saxon race.

I. What are these promises? See Gen. xii, 1-3.—“Now the Lord had said unto Abram, get thee out of thy country, and from thy kindred and from thy father's house, to a land that I will show thee. And I will make of thee a great nation, and I will bless thee, and make thy name great, . . . and in thee shall all families of the earth be blessed.” Gen. xvii, 1-8.—“And the Lord appeared to Abram and said unto him, I am the Almighty God; walk before me and be thou perfect. And I will make my covenant between me and thee and will multiply thee exceedingly. . . . For a father of many nations have I made thee: and I will make thee exceeding fruitful . . . and kings shall come out of thee. And I will establish my covenant between me and thee and thy seed after thee in their generations, for an everlasting covenant; and I will give unto thee and to thy seed after thee, the land wherein thou art a stranger, all the land of Canaan, for an everlasting possession. And I will be their God.” See also Gen. xviii, 18 and xxii, 15-18. To Isaac, Gen. xxvi, 3-4; to Jacob, the same promise, Gen. xxviii, 13-15; and the blessing of Joseph and his two sons, Gen. xlviii, 1-20.

II. The teaching of these promises.

1. The possession of the whole land of Canaan, as a perpetual inheritance, to the lineal descendants of Abraham.
2. An offspring as numerous as the sands of the seas, embracing many nations.
3. All nations of the world to be blessed through Israel.
4. Ephraim to become a multitude of nations, and Manasseh to become a great nation.

Where now shall we look for the fulfillment of these prom-

ises, not the fulfillment of *one* only, but of *all* of these promises, and that to the very letter? For if we cannot find such a fulfillment, where are we?—the Bible is but a fable, and God's word is proved false.

The history of the children of Israel is known to all readers of the Bible (for such only do we write) down to the exodus from Egypt, and thence through the wilderness to their entrance into the land of Canaan; their settlement in that land, under Joshua; the reign of the judges; the clamorous demand for a king; the anointing of Saul as the first king; the selection of David, the son of Jesse, as the king prefiguring Christ; and the reign of Solomon who builded the temple. Here ends the unity of the nation of Israel. At the death of Solomon his son Rehoboam comes to the throne. And the elders of Israel come to him and counsel with him as to some mode of relieving the nation from the great burden of taxes laid upon them by the building of the temple. But Rehoboam, preferring the counsel of the young men, rejected that of the elders. (See 1 Kings xii, 1-15). The result was the breaking asunder of the nation into two kingdoms, viz.: the kingdom of Judah, of two tribes, and the kingdom of Israel, of ten tribes; and the capital of Judah was Jerusalem; but the capital of Israel was Samaria, B. C. 980.

The history of these two kingdoms is found recorded in the first and second of Kings, and in Chronicles. The kingdom of Israel continued till the Assyrian captivity (B. C. 741) when a portion of the tribes were carried away by Tiglathpileser into Assyria. (See 2 Kings xv, 29, and 1 Chron. v, 6-26; Isa. ix, 1, next B. C. 721). The capital Samaria was besieged by Shalmaneser, and the whole kingdom was torn up and the tribes carried away to Assyria and placed in the cities of the Medes, on the river Gozan. (2 Kings xvii, 6-24, and xviii, 10-11). Here the kingdom of Israel becomes lost. The kingdom of Judah continues until the Babylonish captivity, about B. C. 588. (2 Kings xxiv, 10-16, and xxv, 8).

III. Let us now learn, if we can, what became of these ten tribes of Israel.

If the promise made to the patriarch is true, these tribes—

this nation of Israel—must still be in existence somewhere in the world, not bearing the name they had while in Canaan, for the prediction by the prophet was that they should “be known by another name, and by another language should they be addressed.” Their own identity they should lose, that “they shall abide many days without a king, without a prince, and without a sacrifice.” See Hosea iii, 4. It is commonly said that the ten tribes were carried away to Assyria, which, I think, is true, although a part of Dan and the tribe of Simeon seem to have escaped that captivity. Dan and Simeon both had their lots assigned to them on the southwest of Canaan, bordering on the Mediterranean sea. The tribe of Dan found, after a while, their lot becoming too small for them, and therefore a colony was formed, which removed from the old homestead and located at the extreme north of Canaan, near the foot of Lebanon. This colony we will leave for the present, but shall refer to them by and by.

The tribe of Dan, it is said, “abode in ships,” and when Solomon was building the temple Dan was employed in merchant service, and went in ships to Tarshish, in Spain, and thence around into England and Wales, for tin (and other things) which was used by Solomon in the sacred vessels of the temple service, B. C. 1005. Hence the country of Spain and of the islands of the sea were not unknown to Dan and Simeon.

Now, it is found that Dan and Simeon were neither of them disturbed by Shalmaneser, because the kingdom of Judah lay between Samaria and Dan; and Judah being at peace with Assyria, these two, Dan and Simeon, were not captured. But they, belonging to the kingdom of Israel, and their king, with all his army and the mass of the population, being carried away, and their capital being utterly destroyed, Dan and Simeon are said to have embarked in their ships and fled away to the islands in the northwest; and at length they landed, Dan on the north coast of Ireland and Simeon in Wales, where he has remained to the present day. Dan located in Ireland, where he at length organized a kingly government, about 700 B. C.

Let us now return to the other branch of Dan, in the north of Canaan. This branch of Dan seems to have been carried



captive to Assyria and placed on the river Gozan with the other tribes. But he seems not to have rested quietly there; his pioneering spirit soon began to manifest itself, and we find him wandering off north between the Caspian and the Black Seas; and wherever he camped for any length of time, there he left his name—"Dan." Hence the first principal river he crosses, the name Dan (now called Don) is given to it. Next we come to the river *Dan-ieper*, then to the *Dan-iester*, next to the river *Dan-ube*, where a longer encampment was made; thence up the Danube, making temporary settlements only, until they finally landed in *Dan-emarke* (now Denmark). Here they spread out, occupying not only this state, but also Holland and Sweden, etc. At what date this settlement was made it is not definitely known, but it is believed it must have been B. C. at least one hundred years.

#### JEREMIAH GOES TO IRELAND.

At the time of the Babylonish captivity (see 2 Kin. 24: 10-16, and 25: 28, etc.) it is stated that Jeremiah, who had been imprisoned on account of his faithful preaching against the idolatry of the Jews, was ordered by Nebuchadnezzar to be taken up out of the miry pit, and liberty granted to go wherever he desired, and that his wants should all be met and assistance given him in performing his work. And now as the Jews had been defeated by the Babylonians, and their king Zedekiah taken, his sons slain, his own eyes put out, and all to be carried captive, Jeremiah is said to have gone into the temple, before it had been despoiled, and taken from thence the tablets of the law, Jacob's stone, and such other sacred things as he desired, together with the king's daughters who had been trusted to his care. All these, with Baruch and other attendants, after going down to Egypt, went all together away to Dan, in Ireland; on their way they were obliged to put into port in Spain to repair their vessel; and these two men are reported to have carried out from the ship a stone which was deposited on the ground safely, with other things from the vessel; and after repairs had been made these were all transferred back to the vessel. Thence they proceeded on their voyage, and were driven ashore in a storm on the north coast of Ireland.

Here Jeremiah found Dan to have organized a sort of kingly government, and the then reigning prince was Eôchaid II. This prince on beholding the princess daughter, of Zedekiah, was enamored with her beauty, and soon proposed an alliance. To this Jeremiah readily consented, but on this condition: that the government should be purged from all "Baalism," and the divine law as recorded on the tablets should become henceforth the constitution of the kingdom. To this requirement Eôchiad readily assented; and soon the marriage was consummated by Jeremiah, and Tephi (for that was the name of the princess) was crowned queen upon the sacred stone Jeremiah had brought with him, and the prophetic benediction given; that her and her offspring this stone should ever accompany; and every succeeding ruler should be crowned thereon. And it is positively declared, by the tradition of Ireland, that on this stone every ruler in Ireland was indeed crowned. Fergus the First took it over into Scotland, where it was used in the coronation of every ruler down to James the Sixth of Scotland—afterwards James I. of England, and thence to no Victoria, the last that was crowned thereon; and that this very stone is to-day in the coronal chair in Westminster Abbey.

In Ireland these traditions also state: that Tephi died after a few years, leaving a young family of children and Eôchaid to mourn her loss; that to Eôchaid this loss was almost unsupportable, his love to her was so great; that he determined to build a great mausoleum at Tara, where their love had been plighted, and there erect a monument worthy of the memory of that queen, whom all the people adored no less than himself. In this grave, it is believed, were deposited the two tablets of the law, and the Ark that had from the first contained them. For it will be remembered that when the sacred vessels were taken from the temple by the Babylonians, every article was specified by name, but no mention whatever is made of the Ark of the Covenant. And so also, in the order from Cyrus to restore all the things taken by Nebuchadnezzar to the Jews, to be returned to Jerusalem for their temple, no mention is made of the Ark, although all other things were mentioned by name. So also Josephus specifies all the articles brought back

from Babylon to Jerusalem, but is silent as to the Ark. Now the Ark was known to have been in the temple at all times up to the Babylonish captivity, but the history of the world knows nothing of the locality of that sacred Ark from that time to this. Is it unreasonable, then, to believe that Jeremiah did actually take this Ark from the temple when he took the tables of stone? And is it reasonable to suppose "the tables of the law" would be taken from their sacred enclosure, and that enclosure be left empty and alone? And if this were so why was no mention made of it, either by the Babylonians or by Cyrus, or by Josephus? To me it seems most certain that the Ark and its sacred contents were never separated; and that this Ark, whose tables of stone had the law written thereon by the finger of God, cannot be lost, but that the same divine care that has watched over His people in all their wanderings, will surely bring to light this Ark of the Covenant. How can it be otherwise?

And I rejoice to know that I am not alone in this expectation. For already an effort is being made in England and Scotland to raise funds enough wherewith to purchase the "Hill of Tara," and there explore that mausoleum, that covers the dust of Queen Tephî, with the full hope of finding that long lost sacred Ark of the Covenant.

Let us now return to the tribes left in Assyria, on the river Gozan.

These tribes while remaining in Assyria were known by the several names of Cymri, Saxonæ, Angles, Jutes and Gauls. These several names have all been traced back into Palestine or Canaan, viz: Cymri is said to be none other than Samaria, the capital of the ten tribed Israel. Hence the names of a great many places where the Cymri dwelt, such as the Crimea of the Bosphorus; the Crimea of Gothland; Cambria in France; Cumberland in England, and the Cumries in Scotland. The name Saxon is said to be derived from the Hebrew term "Isaac," thence Saxæ, next Saxonæ, by which last term they were known at the time of their migration out of Assyria. So of all these other names.

Some fifty years ago the inquiry was raised in England as to

“Who are the Anglo-Saxons; where did they come from and who were their ancestors?” This inquiry Sharon Turner undertook to answer. After consulting all histories, both ancient and modern, within his reach, he began tracing them back over the route they had come from the East, until finally he brought up in Assyria, in the cities of the Medes, on the river Gozan, the very place where the Israelites were planted by Shalmaneser, who carried them captive from Samaria, their capital. Here he left them, because he could go no further, not knowing or even dreaming that he had thus “identified” the lost tribes of Israel, for the thought of their being such had, as yet, entered the head of no man living, much less his own. This work of Sharon Turner’s seems to have remained unnoticed until a recent date, when one and another, but especially Edward Hine in his investigations on this subject, found here the very key to the origin of the Anglo-Saxons; that they were indeed the “Lost Tribes of Israel.”

Now we find that some centuries B. C. these Anglo-Saxons, etc., began their migrations, and in all cases their movement was westward. Why was this? Why should they all, Dan, Simeon and all the rest, set their faces westward, and thus pursue their wanderings? Had there been given any divine command or any prophetic intimation directing them in this westward flight? No history, either sacred or profane, had at the time of their captivity uttered the first word of the future course to be pursued. But after their captivity the prophets Isaiah, Jeremiah and Ezekiel, together with all the minor prophets, proclaimed from the divine command that Israel was to be planted in the islands of the seas, in the far west and north; that there they were to rest; that during the time of their migration hither “The children of Israel shall abide many days without a king, and without a prince, and without a sacrifice,” but “afterward shall the children of Israel return and seek the Lord their God, and David their king; and shall fear the Lord and His goodness in the latter days.—Hosea iii: 4-5. And also, “I will sift you among all nations as corn is sifted, yet not a grain shall be lost.” These with many other similar predictions were uttered by the prophets

after Israel was carried away captive into Assyria, but no one of them had ever reached the ears of any one of the thousands of the captives of Israel in all their wanderings.

But the faithful covenant-keeping God who had promised Jacob "Though I make a full end of all nations whither I have driven you, yet not a hair of your head shall be lost." That faithful God, therefore, by an unseen hand, led his people in all their wanderings, as truly as he had led Abram long before to a land, he not knowing whither he went. So in like manner all these ten tribes of Israel were led, they knew not why nor whither, away to the islands of the western seas, "where they were to rest and be increased, till they had become a mighty people," and in the end all the promises made to the fathers should be literally fulfilled, and fulfilled in themselves the very children of Israel, the lost ten tribes! How wondrous are the ways of God; that amazing love, love unknown! When Christ came He said, "I am not sent but to the lost sheep of the house of Israel." And in giving charge to His disciples He said, "Go not into the way of the Gentiles, and into none of the cities of the Samaritans enter ye; but go rather to the lost sheep of the house of Israel." In obedience to this divine injunction, we find the apostles going their several ways to the very regions of country where these ten tribes were now wandering, viz: Pontus, Galatia, Cappadocia, Bithynia, Macedonia, etc. Here they were looking out from the northwest point of Asia into Europe, seeking the land of their rest. And thus they were led on until the Anglo-Saxons were planted in Germany, where they must abide for a season, known only to Him who led Israel in the exodus out of Egypt. But hitherto are they led without the loss of the least of their tribes.

#### THE ANGLO-SAXONS ENTER ENGLAND.

Now we have reached ground traversed by the historians of England, viz: Hume, Macaulay, Knight, etc. These all have to begin about A. D. 1, soon after the ingress of Julius Cæsar into England. The history of England it is not necessary to repeat until about A. D. 440, when the Anglo-Saxons were induced, from various considerations, to come over into England,

where some of their brethren had been for a long time, even from the first settlement of that country. For it is conceded by all that the original inhabitants of these islands were the Celts, the Gauls, the Picts, and Scots, etc. But who these various tribes were, the Anglo-Saxons were totally ignorant. Yet we have seen above that all these were none other than some of the very ten tribes. Here, then, the Anglo-Saxons came, and soon established the heptarchy—some say an ochtarchy—just agreeing with the number of tribes concealed away in their body. Yet they knew not what they did. They builded better than they knew.

Here they began to grow and to prosper, until about A. D. 800, when these petty kingdoms were all consolidated, and Egbert was crowned king of England. In this form the government was continued, in peace and apparent quietness, until the eruption of the Danes in their piratical invasion, which continued till in A. D. about 1030. But who were these Danes? Ah! they were none other than the descendants of Dan, whom we had traced in their migrations from Assyria through the north of Europe to their final settlement in Denmark.

But what is the next scene in the development of this divine but wondrous drama? At this time we find a kingdom of great power had grown up in Normandy (now France) which was stretching out its right hand about to seize the crown of England. Soon William the Conqueror, at the head of his mighty army, crossed over and landed in England, and at the battle of Hastings gained a complete victory, and thus capped the climax by placing the crown of England on his own head.

But this William the Conqueror, who is he, and whence his origin? Evidence seems to point in one way only—that these Normans were indeed the very tribe of Benjamin!

Here, then, we have assembled the ten tribes—yes, the eleven tribes, counting the tribe of Manasseh—as one. These possess England, Scotland, Wales and North Ireland. But not one of them all is found to have any knowledge of his own origin, or that of any of his neighbors. And here this people, under this government of Great Britain, continue to grow—to lengthen



their cords and strengthen their stakes"—having never been conquered in battle, either by land or by sea, up to the present time, A. D. 1884.

#### FULFILLMENT OF PROPHECIES.—A FEW.

Concerning this subject, this may be said: that all the prophecies in the Bible, uttered by whomsoever or towards what people or kingdom soever, yet all have reference, directly or indirectly, to the fulfillment of the promises made by God to Abraham, Isaac and Jacob. Not a prophecy have I been able to find, after the most diligent search, which is not aimed at this end—the *building up of God's kingdom in this world*; for this is none other than the aim of those promises. Even the prophecies uttered against Egypt or Babylon, Assyria, Tyre or Moab, these all look to that very end, viz.: the fulfillment of the promise to the fathers; aside from this they have no meaning; but, this end in view, they are all full of meaning, even the most minute prediction; for God never utters a prediction of mere empty words, as man often does, words containing nothing (*vox et preterea nihil*). Bearing this in mind, let us look at some of the prophecies concerning His people Israel.

Gen. xxvii, 29.—“Let people serve thee, and nations bow down to thee.” This is a prophetic prediction uttered by one of the patriarchs himself in the very dawn of the kingdom of God; yet how manifestly this reaches out to the long distant nations, making them all tributary to this end. Again, “The nation and kingdom that will not serve thee shall perish; yea, those nations shall be utterly wasted.”—Isa. lx, 12. This threatening prediction is given concerning God's ancient people Israel. Every nation and people is to render service to Israel, but those that refuse shall be utterly destroyed. Many other like predictions might be cited, but these are sufficient to this point.

We will now turn to another class of prophecies. “Yet the number of the children of Israel shall be as the sand of the sea, which cannot be measured or numbered.”—Hosea i, 10. This prophecy was uttered about the time of the Assyrian captivity, when, to all human appearance, the whole nation of Israel

would soon become extinct. But that very people, "the kingdom of Israel," not Judah, have now become so numerous as to outnumber any other nationality in the world.

Deut. xxviii, 12.—"Thou shalt lend unto many nations, but thou shalt not borrow." Where is the people to whom this will apply? Can it be said of any of the nations of Europe, they lend to many, but borrow from none? Is this true of France? Who can answer? Of Spain? Alas, who does not know that Spain is bankrupt? So of all other governments on the continent, is there any one of whom it can be said, "they lend to many, and borrow from none?" Such a nation cannot be found. But in the islands of the sea, how is it? What saith England? Is it not known the world over that the wealth of England is so great that she alone of all the nations on this globe does actually "lend to many nations, but that she borrows from none?" Is not this, then, one case in evidence that the Anglo-Saxons are indeed God's own chosen Israel? Again it is said: "Thy seed shall possess the gate of his enemies."—Gen. xxii, 17. Where shall we look for the fulfillment of this prophecy? What nation can be found of whom it can, in truth, be said, he possesses the gate of his enemies? This is to have the entire control, for whoever possesses the entrance to one's palace has most surely the control of all within and about the palace; and that nation that holds possession of the *gate of his enemy*, how can it be that he has not the control of that enemy?

Now, England does, in fact, possess the gate of all her enemies the world over. But can this be said of any other nation of Europe, or of the entire world? Here, then, we have another case of the fulfillment of God's promises to Abraham, etc.

Again, it was promised to Abraham that in his seed all nations of the earth should be blessed. Now, this promise must embrace blessings both spiritual and temporal.

We have seen already that the Anglo-Saxons are indeed the seed of Abraham. Let us next learn what is true as to the blessings, of a temporal kind, bestowed by this people on the nations of the world. And here does it need the knowledge of all history to show that the chief blessings of civil and religious liberty now enjoyed throughout the world have been de-

rived mainly from the Anglo-Saxon race? And then more especially is this true as it regards spiritual blessings. But what are we to understand by the term "spiritual blessings?" The meaning which I apply to this term is: that system of religion taught in the Bible, as set forth in both the Old Testaments and in the New. What nation then, or people, have fulfilled the promise to Abraham in this particular? Let us see. Who are the missionaries that are now proclaiming, in all parts of the world, the great salvation? Who are they and whence do they come? All who are familiar with this subject know full well that the missionary spirit seemed to have had a direct and divine inspiration infused into this Anglo-Saxon race, both in England and in America, at a period early in the present century. Their missionary societies were formed first in England, afterwards in America, and from these two sources have sprung all the streams of missionary influence now blessing the world. And can any one point to a single missionary in any part of the world who was not sent out through this Anglo-Saxon influence? It has been objected, indeed, that several missionaries have gone out from Germany. Yes, but who are these? Did they not go from Saxony, the very home of the Anglo-Saxons? And was not Luther of the very marrow of the Anglo-Saxon race? Let him say nay who can. So of the Huguenots, can any one show, by any *probable* evidence, that they are not of the tribe of Benjamin, *i. e.*, of William the Conqueror's men? What, then, do we find? Is it not this: that the great company of preachers in all parts of the world are Anglo-Saxons, directly or indirectly? And these are unlike the missionaries of any other religious order in the world, in this: that they all carry an open Bible, thus distinguishing themselves from the Jesuit missionaries.

And now what about the Bible? The voice of the living preacher, though ever so eloquent, is soon lost in the silence of the air if he go alone and have not the oracles of God, the Bible, in his hand, and presented also to all his people. What, then, has this Anglo-Saxon race done with the Bible? First, they have not only sent each and every missionary with a Bible in his hand, and charged the same to make these Bible teach-

ings known the world around, but they have translated this blessed book into all the principal languages of the world, and then printed and sent abroad, like the leaves of the forest, so that to-day there is not a nation or tribe known on the face of the earth now destitute of a copy of the Bible.

Again, in Deut. vi, 7-9, it is enjoined to God's people Israel: "Thou shalt teach them diligently to thy children, and shalt talk of them when thou sittest in thine house; and when thou walkest by the way, and when thou liest down, and when thou risest up. . . . And thou shalt write them upon the posts of thy house, and on thy gates."

Now, this has been done *literally* by the Anglo-Saxon race, wherever found, whether in England or in America, or in the islands of the seas afar off in the remotest parts of the world. But what other peoples have done this? Does the history of the world give any clue to the name of such a people? Has not this case, then, some showing that the Anglo-Saxons are the identical Israel of God? What can be more evident? If any one can tell, let him speak.

#### THE BLESSING OF JOSEPH'S SONS BY JACOB.

The closing scene of Jacob's life—one of the most beautiful ever recorded—is contained in the 48th and 49th chapters of Genesis. This whole account I recommend to careful perusal by every one who desires to get a thorough understanding of the prophetic predictions uttered by Jacob, under the divine inspiration then given him. The special topic to which our attention shall now be directed is the blessing Jacob gave to the two sons of Joseph.

When about to die, Jacob called for these sons of Joseph that he might bless them. And Joseph approached his Father, bringing his two sons, placing Manasseh, the elder, at Jacob's right hand, and Ephraim at his left hand, that each might receive the blessing according to his age, the right of primogeniture belonging to the elder son. But Jacob, stretching out his hands, crosses them, and places his right hand on the head of Ephraim. But this displeases Joseph, who lifts up his father's hand, saying at the same time, "*this* is the older." "I know

it, my son ; I know it," says Jacob. Then he pronounces the blessing. First, "that they shall *grow* to a multitude in the midst of the earth." This term *grow* is rendered in the margin of the Bible, *as fishes do increase*, spawning by the millions. Then he pronounces the blessing that Manasseh shall become a great nation, but not like Ephraim. Ephraim's seed shall "become a multitude of nations." Here, then, we have the blessing stated definitely that Manasseh should "become a great people," but Ephraim "a multitude of nations." Is it possible now to find the fulfillment of these predictions—not something approximating toward a probable fulfillment, for these cases admit of nothing but the most exact and literal fulfillment? Let us see then how the case stands. What are the facts?

These two sons, Ephraim and Manasseh, we have found to be dwelling with the Anglo-Saxons ; that with them they came into England ; that there they have gained a permanent residence, and that these Anglo-Saxons are none other than the lost tribes of Israel. We find, also, that "Ephraim" is often used as "Israel" by the prophets, and particularly in Ezekiel xxxvii, 15-20, where Ephraim is declared to stand for the head of the house of Israel, to lead Judah back to Jerusalem.

Ephraim, then, represents the head of the English nation. What, now, has England, *i. e.*, the government of Great Britain, to show as meeting the conditions of Jacob's prophecy?

First, there is the home government of Great Britain ; next there is Canada, a large nation of several millions ; then the West India Islands is another ; then crossing over the Atlantic to the west coast of Africa is another assemblage of colonies, making a government ; proceeding on to South Africa, there we find two large nationalities ; from here we sail into the south seas, where we find Australia, Tasmania and New Zealand, three large nationalities ; thence we take our flight northward to India, where we find more than two hundred millions of people, embracing eleven (some say sixteen) distinct nationalities, all recognizing the government of Great Britain, and Victoria as their Empress. Then, still further, islands of the Pacific hold other settlements of Anglo-Saxons, so that historians now

tell us that the British government has, within the bounds of its empire, sixty different colonies—nationalities of people.

Now, what have any or all the governments of Europe got to show on this subject as an offset to this exhibition of Great Britain? Let us see.

France has her home government, and once held by her forts much of the country from the Gulf of St. Lawrence to the Gulf of Mexico. But where are these possessions now? Alas, they have long since been absorbed by Ephraim.

Well, Spain; what of her? Spain once extended her sway over the entire continent of North and South America, and had her colonies planted from one end to the other. But where are they now? All have vanished like bubbles on the ocean's wave.

Italy, then, from the great iron Roman empire, what of her? Ah, Italy indeed, she is herself but just born, and that out of the smoldering dust of old Rome. She has nothing but her own infantile self. So of all the other governments of Europe is there one that can show a single item, claiming to the fulfillment of the promise made to Ephraim! But in the government of Great Britain we have found that she has grown, literally, into "a multitude of nations." Now, it may be asked with confidence, is it possible to specify the wanting of the least thing as a failure to the fulfillment of Ephraim's blessing, even to the crossing of a *t*, or the dotting of an *i*? If so, let that be shown? If, then, a prophecy is fulfilled to the very letter, a prophecy in which is wrapped up the great blessings of the world, for which we have long been praying, though we knew not why, need we hesitate when we find the veriest fulfillment of the prophecy staring us fully in the face—need we hesitate to receive it? Alas, this only can be from our blindness—our weak faith—our want of confidence in the certain fulfillment of God's word, that He will fulfill to the very letter all his promises. For He says, "If the ordinance of night and day shall fail, then shall my promise to Israel fail of its accomplishment." No, the trouble is, we have so long been accustomed to the spiritual interpretations of all the promises made concerning Israel, the nation of Israel I mean, notwithstanding the repeated assertions of God himself to the

contrary, that we stagger and hesitate when we see the fulfillment palpably before our eyes. As for myself I can conceive of no more, I can ask for no more perfect fulfillment of the promised blessing made to Ephraim than is here shown to be found in the government of Great Britain.

Manasseh, can we find a like fulfillment of the prophecy made to him.

In examining the prophecies made to these two sons of Joseph, we observe a marked difference; the one was to "grow into a multitude of nations," the other was to be confined to one nation, yet its greatness unlimited. With this destination in mind we will proceed.

It will be remembered by all who are familiar with the history of England, that Wycliffe published a translation of the Bible in English about A. D. 1380. This was received and read with absorbing interest; that about 1526 A. D. Tyndall published his more perfect translation, which was grasped by the multitude as the very manna from heaven. The reading of this work produced what were called the Puritans. This edition of the Bible was soon confiscated by the Papal power which then held sway in England, and Tyndall himself put to death. But the seed thus sown could not die here. Henry VIII., then at war with the Pope, soon published a small edition of the Bible, about three hundred copies if I am not mistaken, all of which he distributed to the various parishes, to be chained in the chancel of the churches, to be read by any one who desired to do so. After this Elizabeth published the "Bishop's Bible," which gave an increase in the circulation of the Scriptures. But this only prepared the way for the publishing of "King James' Bible," which is our present copy of the Scriptures. On this translation there was no prohibition; and hence the Bible was studied with the intensest thought. The Puritans, therefore, became more numerous, Cromwell among the rest; and A. D. 1620 a company of about one hundred and three was formed, and put into a little vessel called the "Mayflower," which was started out to sea, its course being directed by some unseen hand, till at length this little band were landed on Plymouth Rock in the dead of winter.

Who could have devised such a plan? Surely, no human wisdom would have risked its reputation in such a scheme! But in all this movement there stood a wiser counsellor than earth affords. Here was to be planted the germ of that "great nation" predicted by Jacob to Manasseh.

Let us see then what became of that little band of Pilgrims. Why, the first winter buried the half of them in death! This certainly does not look much like the "growing into a mighty nation." But "God's ways are not always man's ways, neither are His thoughts our thoughts." Here this germ, this little branch, taken from the tree of Liberty in England, is transplanted in a virgin soil, where it has unlimited power of growth, and "none to molest or make afraid." And what do we find to-day? Here we see what the world can show the like of nowhere else. This little germ, almost killed by the first winter's frosts, has sprouted up, and grown and grown until its branches now reach from the Atlantic to the Pacific, and its roots extend throughout all the land from the North to the South! This tree of Liberty, the cynosure of all nations, why are such multitudes flocking hither? Who can tell? Let him answer who can. This whole affair—what is it but a perfect enigma to human view? But looking through the divine telescope all darkness flees away, and the very stars of the last magnitude stand out with minute distinctness. Yes! God is fulfilling His promises. He is not dead, neither has He forgotten His covenant. His faithfulness shall not fail till every jot and tittle of all He has promised to Israel, by the mouth of all His prophets, shall be accomplished.

Here, then, in America, we find the conditions of the promise made to Manasseh fulfilled to the very letter. And if they are not here, where shall we look? In what part of the world to find their fulfillment? Or where shall the man be found that will undertake, either by his own wisdom, or the wisdom of all the world combined, to delineate a more perfect fulfillment of Manasseh's promise?

NEBUCHADNEZZAR'S DREAM.

In Daniel ii. is the account of a wonderful dream had by the king, and which greatly troubled him. And having lost the



true outline of the dream, the king summoned all the astrologers and soothsayers, demanding of them to make known to him both the dream and the interpretation thereof. And this must be done or death should be their portion. On the approach of the officer to whom this business was entrusted, Daniel inquired, "Why is the king so hasty?" giving the officer to understand that he could, by the divine aid, answer the king's demand.

The result was that Daniel was brought before the king, and there told the king his dream, specifying its minutest appearance; and afterward its interpretation. The dream was the appearance of a great image, whose head was gold, its breast and arms were silver, its belly and its thighs of brass, its legs of iron, its feet of part iron and part clay. Then a stone cut out without hands, smote the image on the feet and broke them to pieces. Then this whole image became like the chaff of the threshing floor, scattered and found no more, and the stone became a great mountain and filled the world.

The interpretation of the dream, says Daniel, is this: "Thou, Nebuchadnezzar, art this head of gold. After thee shall another kingdom, inferior, come; a third of brass, which shall bear rule over all the earth. And the fourth kingdom shall be strong as iron, . . . and shall break in pieces and bruise; and the toes of the feet, part of iron and part of clay; the kingdom shall be partly strong and partly broken. . . . And in the days of these kings shall the God of heaven set up a kingdom, which shall never be destroyed; and this kingdom shall not be left to other people, but it shall break in pieces and consume all these kingdoms, and it shall stand forever. "For as much as thou sawest that the stone was cut out of the mountain without hands, and that it break in pieces the iron, the clay, the brass, the silver and the gold, the great God hath made known to the king what shall come to pass hereafter, and the dream is certain and the interpretation thereof sure."

Here we have an outline, given by divine inspiration, of what is to transpire, down to the end of time. And the explanation of this dream is given in such terms as to have secured the entire consent of commentators in nearly every particular.

All agree that the Babylonish kingdom represents the head of gold; that the Medo-Persian kingdom represents the arms and breast of silver; that the Grecian kingdom, under Alexander, the brass; and that the Roman kingdom, in its kingly and its imperial form, represents the iron. But strange as it now may seem, the mass of commentators have given to the stone a different meaning than what is given to the other parts of the great image. All these parts, from the head to the feet, represent kingdoms, *i. e.*, nations of peoples. Why, then, should the stone be taken to represent Christ, as it has been by multitudes? Does not Daniel say expressly that this stone represents a kingdom (of peoples) which the God of heaven will set up in those days, and that this kingdom will not be left to other peoples, but it shall stand forever? What can be more evident than that the stone represents a kingdom of human beings (of peoples) the same as the other kingdoms? To me, indeed, it seems most evident; the only difference there is being in the character of this people constituting this stone kingdom.

Where now shall we look for a people whom the God of heaven shall set up as His kingdom and which shall stand forever, consuming all other kingdoms represented by the great image? Has God a chosen people, a peculiar people, separated from all the peoples of the world, and which people he calls His own? Has He not said that this people shall not be destroyed, that though he should make an end of all nations among which He would scatter his people, yet he would not make a full end of Israel, but Israel should continue His own distinct people to the end of time, and that this very people were to become, in the latter day, like the sands of the sea "which cannot be measured nor numbered?" All this He has declared by the mouth of His many prophets, over and over again, and confirmed all with His own infallible oath, that the heavens and the earth should perish, yet not one jot or tittle of His word should fail." What can be stronger than this? What can be conceived more sure and everlasting?

There must be some nation of peoples now somewhere to answer to this stone kingdom which the God of heaven was to

set up "in those days." But that people must be His own people, and not some strange or unknown people.

Now it has been proved above, if it is possible to prove anything respecting the fulfillment of prophecies, that the Anglo-Saxon race are indeed the identical descendants of the lost ten tribes of Israel. If this has not been proved, then nothing can be proved. If so, how can it be proved that such a person as Abraham ever lived, or Isaac, or Jacob, or Moses, or David, or Solomon, or any other person mentioned in the Scriptures, even Jesus Christ himself?

Now, I think it can be shown conclusively that the government of Great Britain, the English speaking people, is the very nation represented by the stone.

At the time of the migration of the Anglo-Saxons into England, about A. D. 440, there was established a heptarchy, some say an octarchy, *i. e.*, petty governments ruled by chiefs, in number equal to the numbers of tribes then concealed in that Anglo-Saxon body. Yet this was known to no one of their number at the time, for they had lost all knowledge of their own identity in every respect; but they builded better than they knew, and thus under the divine guidance—the same that led Israel out of Egypt and in the wilderness—they here laid the foundations of a government that is to stand forever. Under this heptarchy they began to grow, until A. D. 800 these seven little kingdoms were all amalgamated into one kingdom, and the crown placed upon the head of Egbert, the first king. From this little germ that nation has been growing, slowly at first but increasing with the lapse of time, growing with greater strength as time advances. Indeed, historians tell us that, unlike all other nations of Europe, England has never been conquered in battle, either by sea or land, up to the present time!! And to-day England is "at the head and not at the tail of all nations;" that she (the Anglo-Saxon race) is permeating all the nations of the world by her influence, and that her sixty colonies do now girdle the world.

Where, then, can we put down our finger and say, here is a point wanting its fulfillment on God's kingdom of stone? Indeed, is it possible to find any, the least iota, which has not

its literal fulfillment in the stone kingdom up to this time? The end is not yet.

Let us now review the ground we have gone over, and ascertain, if possible, what we have found :

1. First, we have found that God made a covenant promise with our fathers, Abraham, Isaac and Jacob, by which He secured to them and to their posterity (*a*) the everlasting possession of the whole land of Canaan, extending from the river of Egypt even unto the great river Euphrates.

(*b*.) A progeny numerous, beyond computation, which was to pervade all nations.

(*c*.) A race of kings reaching down to the end of time.

(*d*.) That all nations of the world were to be blessed in, and through this Israelitish nation.

(*e*.) And finally that he would never leave nor forsake His people till he had accomplished, to the minutest article, everything promised in the covenant.

2. We have found, in our examination of the divine providences towards His people, that Israel was led, in all things, under the direction of that promise, down to Egypt, thence out of Egypt, through the wilderness, into the land of Canaan, the country of their inheritance ; that here every tribe had its lot assigned, and this lot was occupied in accordance with the divine decree ; that here the nation began to take root and become great, first under Joshua, then under Judges 400 years. At length they demanded a king, like other nations, which was given them, Saul being the one selected as their king. The successors to Saul were David, and next Solomon, who builded the Temple, God's House ; that after Solomon came Rehoboam his son, under whose reign the kingdom was broken in two, and hence became two nations—viz., the nation of Judah, formed of the two tribes, Judah and Levi, which is from this time called the Kingdom of Judah. The other of ten tribes, was called the kingdom of Israel, whose capital was Samaria, but Judah's capital was Jerusalem.

These two kingdoms continued, each in its separate existence, till A. D. 724 (about), when the kingdom of Israel, on account of its great idolatry, was besieged by the Assyrian king ; their

capital was destroyed, and the nation captured and carried away to Assyria, and placed in the cities of the Medes, on the river Gozan. Here they were "Lost." Lost to the world, but not to God.

3. Next, we have found these ten tribes, that constituted the kingdom of Israel, all located in the isles of the sea, in the far N. W., according to the prophetic predictions. First, Dan to Simeon, whom we found to have been acquainted with the country, by employment under Solomon, in transporting tin, etc., from England in A. D. 1,000; these, Dan and Simeon, took ships and sailed away to Ireland, Dan locating on the North of Ireland, and Simeon settling in Wales.

4. The other branch of Dan, we found to have wandered off from Assyria, leaving his name at every encampment he made, till his final settlement in Denmark.

5. Next, we found the tribes that were still in Assyria had received the name and were called Anglo-Saxons while there. And that these tribes were conducted by an unseen hand first, into Germany, next into England, where they became permanently located, and where they established the heptarchy, A. D. 500. And about A. D. 800 these governments were all united under one head, and Egbert was crowned their king.

6. Finally, "William the Conqueror," the leader of the tribe of Benjamin, comes in from Normandy, and at the battle of Hastings is crowned king of the ten tribes, all congregated here in the English Government, called now, and for long time to come, the Anglo-Saxons.

7. We have found the promise of Jacob to the two sons of Joseph literally fulfilled—viz., that Ephraim was to become a multitude of nations, and Manasseh a great nation, Ephraim's promise is found to be literally fulfilled in the government of Great Britain, with her sixty colonies; while Manasseh stands equally crowned in the United States of America.

8. And, again, we have found all the nations of the world being now blessed, politically, financially and religiously. Hence, we find that the interpretation of Nebuchadnezzar's dream has its perfect fulfillment in the government of Great Britain, or rather in the Anglo-Saxon race.

Here then we reach the final conclusion, and find, in every particular, embracing every iota, the promise made to the fathers, and the prophecies uttered by the prophets concerning lost Israel.

What now shall we do with this exposition? Shall we receive it or not? Indeed, what more can be asked? What more can be conceived? Have not the promises, the prophetic predictions, been all verified up to this time? Can anyone specify the least thing, and say, this has not been fulfilled? Indeed, the fulfillment in all things is so marked that the world may be challenged to write out a more exact fulfillment of these prophecies up to the present time than we have found actually to have taken place in our review.

As to the future we are not anxious to enquire, and we will not speculate, for the history of the world shows that all such speculation is vain, for no one knows how God will fulfill his promises. Is it not most manifest that of all those who have written upon the fulfillment of future prophecies, not one has hit the nail on the head. The actual fulfillment not being what the theory supposed it would be! How foolish, then, to speculate on the fulfillment of future prophecies.

There are many prophecies yet to be fulfilled, such as this, Isa. xi: 11, "And it shall come to pass in that day that the Lord shall set his hand again the second time to recover the remnant of His people," etc. But when He will do this, or by what agencies it is to be accomplished, He has not told us.

Also, the great battle of Armageddon, or Gog and Magog, we are assured shall be fought, and the utter defeat of God's enemies is predicted; but the exact time of this battle, or how it is to be engineered by the commander of the diabolical hosts, God has not revealed to man—only the certainty of the event. So also He has promised, Jer. xxxi: 31-35: "Behold the days come, saith the Lord, that I will make a new covenant with the house of Israel, and with the house of Judah. . . . I will put my law in their inward parts, and write it in their hearts. . . . And they shall teach no more every man his brother, saying 'know the Lord,' for they shall all know me from the least to the greatest of them, saith the Lord; for

I will forgive their iniquity, and I will remember their sin no more ! ”

Now, this promise has certainly not yet been fulfilled. But the time is coming when it shall be fulfilled to the very letter ; but when the exact time, or how this is to be accomplished, we know not, only we are assured that God is to be the chief actor in this wonderful drama.

What wonderful events, then, seem about to break upon the world ! These many and great prophecies which stand struggling for admission at the very door ! But which of all these shall enter first, or how long shall be the time of its fulfillment, who can tell ? Then, when these shall have been accomplished, what next ? Ah, what but the glorious appearing of the Great Lord, our Saviour, Jesus Christ, even in that very form He went away with, vanishing from the gaze of His disciples ! Even so, “ come Lord Jesus, come quickly.”

E. P. INGERSOLL.

June, 1884, A. D.

## THE SPHINX.

This well known monument ranks next to the Pyramid, not only in location but in interest; and yet theory has so far failed to cover its mysteries, and research has been lost in the clouds of sand that overwhelm both fact and fancy, while poetry in terming this monster "a watcher at a tomb" has shown her usual indifference to truth. The Pyramid, which it watches, being only a "tomb" in so far as it is a type of a resurrection, holding within itself a revelation. There is no need to say here that this "revelation" is already lighting the path of knowledge on which many are running to and fro.

What, then, is this mystery that, unlike its solemn neighbor, has no voice but in its outward form? Of what is it typical? Does it tell of past or future? Does it commemorate an era, or does the cartouch of a king confine its history to the life of one human being? If I may be pardoned for a repetition of what is already known, the collection of facts will aid in the formation of an opinion on the subject.

Its form has, until recently, been considered as a union of a woman and a lion. As now partly visible above the sand, the giant head gives little indication of either. The face is mutilated, the nose is said to be in the Berlin Museum, the beard has fallen off, the serene beauty of which we have heard is lost among the attacks of friends and enemies, and late travellers irreverently compare it to some nondescript animal. It is pathetic in its helpless ruin and in its powerless protest against the cruel sand. Let us try to imagine it as it appeared to the worshippers of Horus, and judge whether it was not worthy to have been designed by the same great architect who planned the Pyramid, and a monument of the same race of builders.

One of the earlier travellers (Belzoni in 1815-'19) found traces of a pavement which he thought surrounded the Pyramid, and on which, he says, were erected the three great monuments to



which he ascribes the same date. These are the largest Pyramid, the Temple on the east side, and the Sphinx on the extreme southeastern edge of the platform or pavement. This pavement is strangely spoken of in "J. E. Perring's Report" (1839) as having been "discovered by Colonel Howard Vyse, while endeavoring to find the lower entrance passage to the subterraneous apartment, in which, according to Herodotus, the body of Cheops was deposited on an island surrounded by the waters of the Nile." Perring says the pavement is 1 foot 9 inches in thickness, and extended in the centre 33 feet 6 inches beyond the original base, but at the excavations eastward and westward of the centre it was not more than 12 or 13 feet wide. The stones he says are "carefully and beautifully fitted together."

This measurement would not admit of the Sphinx being upon the pavement, but that can only be decided by those who have examined it in reference to the settlement of this question. He also says that the plane at the base of the rock on which the pyramids of Gizeh stand was probably cultivated, but from the accumulation of sand from the desert it is now above the reach of the annual inundation of the Nile. This I quote from what Professor Symth terms "that excellent, though unwieldy and seldom consulted folio of enormous plates," which lies open before me, and which I have vainly examined to determine the exact distance of the Sphinx from the Pyramid. Whether this monument is or is not on the pavement, it certainly is on the same rock as the pyramids, and this is stated to be 150 feet above the desert level. Its position indicates a reference to the Pyramid, being—according to Perring's survey—placed diagonally from its southeast corner, facing east, and stretching out its huge paws towards the Nile. In the 'History of Egypt,' by Samuel Thorpe, the author says of this "lion with a man's head, there were probably two of these monsters, one on each side of the Pyramid, and probably of the same age of the Pyramid they were intended to ornament." If another existed, or was projected, on the northeast corner, their connection with the pyramid idea would be proved, and the approach from the Nile would be something unsurpassed in magnificence. What:

this approach was we can imagine by the aid of Captain Caviglia, or accept with the reproduction of gorgeous ceremonial as described by the Rev. J. H. Ingraham in his 'Israel in Bondage,' a book not recognized by scholars as he hoped it would be, and yet a work resulting from the study and research of the same authorities to which we must resort. His magnificent description is too long to quote. The immediate approach to the Sphinx was excavated by Captain Caviglia. He found a sloping descent of 135 feet cut in the rock, ending in a flight of 13 steps to a level platform, from which another flight of 13 steps led down to the temple which was placed between the fore paws. This descending approach heightened the impression of the magnitude of the Sphinx as it appeared to rise before the spectator. From the platform on which the feet rested to the top of the head was 62 feet, the extent of the paws 50 feet, and the whole length of the body 140. Kenrick says the whole body is excavated, except part of the back and the fore paws, which are covered with hewn stone; others assert that the whole figure is formed of hewn stones, and they discover the cement which joins them; this again is denied by those who see the veins of the rock in the apparent lines of cement. M. Maillot considers these lines as natural and not cement. Probably the fact is that the rock was used as far as possible, its deficiencies being made up by stone-work. In a note on the few words in which Herodotus dismisses the Sphinx, Savary says: "Opposite the second pyramid is the Sphinx, the whole body of which is buried in the sand; it is of a single stone, being part of the rock on which the pyramid stands." Ingraham states that it was made by a king of the oldest dynasty, who chiselled into these grand proportions a mass of rock which, projecting from the Lybian hills, nearly obstructed the view of the largest pyramid. He also speaks of it as "an andro-sphinx," crowned with a helmet, on which the sacred serpent was affixed, and as having "a great and full beard," and as being a deification of Chephres. In the description of Egypt, taken from the account of M. Maillot, French Consul at Cairo, 1735, we read, "This union of the head of a virgin (fille) with the body of a lion, so common among the representations that one

meets in Egypt, was a symbol of that which is known in this country under the signs of Virgo and Leo."

This, according to the consul, is the annual inundation of the river Nile, and the fertilization of the soil by the action of the sun's rays upon the saturated earth, rendering Egypt fertile and habitable. "The kings of Egypt," he says, "knowing no better way to acknowledge to the sun their reverence for him as the author of their felicity, they consecrate to him this mysterious figure." The elder Pliny (book 36) says the Sphinx was looked upon as a divinity by the people, who said that King Harmais was buried in it, and that it was brought from a distance. He is, however, so very disrespectful to the pyramids that his testimony is not fully reliable. Of these gigantic monuments he says: "They are so many idle and frivolous pieces of ostentation of their resources on the part of the monarchs of Egypt." He asserts, however, that the Sphinx was hewn from a solid rock, and the face colored red, from a feeling of veneration. The circumference of the head around the forehead is given as 102 feet, and the height from the body to the top of the asp, or the summit of the head, as 62 feet. He does not speak of the mutilation of the nose, and we may hope that important feature was adding dignity to the face when he was there. The asp certainly was, and that was a part of the ornament of what is described as a crown or helmet. Wilkinson says (vol. 2, page 334) that "the allegorical connection between the Sphinx and the monarch is pointed out by its having the kingly beard as well as the crown and other symbols of royalty." This beard seems to have been discovered by Captain Caviglia, who revealed the magnificent approach. Sir Howard Vyse says (vol. 3, page 109): "Captain Caviglia discovered fragments of stone, on which was represented plaited hair. On seeing them I was led to imagine them parts of a beard, or at least of that singular appendage denominated a beard, and frequently attached to the chins of male personages in Egyptian sculpture." Wilkinson explains the forms of these appendages ('Ancient Egypt,' vol 2, page 332): "The most singular custom of these Egyptians was that of tying a false beard under the chin; it was made of plaited hair and of a peculiar form,

according to the person by whom it was worn. Private individuals had a small beard scarcely two inches long; that of a king was of considerable length, square at the end, while the figures of gods were distinguished by its turning up at the end. No man ventured to assume or to affix to his image the beard of a deity, but after his death it was permitted to substitute this divine emblem on the statues of kings, and of all others who were judged worthy of admittance to the elysium of futurity, in consequence of their having assumed the character of Osiris, to whom the souls of the pure returned after leaving their earthly abode." The beard of the Sphinx (probably a later addition) according to the same author, and as before stated, indicates a king. This may, however, be called in question, and future discoveries reveal the turned up end, which would place our monster in the role of deities. Whatever be the shape of his or her beard, the greatest amount of testimony is in favor of the divinity of the Sphinx, or of its final deification. That it was an object of worship at some period is as nearly certain as anything that depends on testimony. Kenrick says: "A Sphinx is a representation of the monarch whose name it bears;" but Mariette Bey (in his Catalogue, page 270) quite reverses this decision in his description of one of the Sphinxes in the museum at Cairo, which does not bear the cartouch of the king who made it. He says: "By a sort of usurpation of which examples abound, these sovereigns successively ornamented this monument of San with their legends. These were Apappos, a shepherd king; Mèneptah, who put his inscription partly over that of Apappos; and Psousennis; so that the date of a Sphinx cannot be decided by a cartouche with any more certainty than the name of its builder, as the first king who appropriated it may have had no more right than the last." Pliny spoke of the red color of the face; this indicates a sacred purpose, as Pausanias, quoted by Sir Howard Vyse, says that in Egypt and in India this color was so applied. Diodorus speaks of a sacred book being inscribed in red characters, and says that its writers wore red dresses. Professor Smyth and Sir Howard Vyse speak of hieroglyphics on the Sphinx, but Kenrick says there were none on any part of it. They may

have been on the tablets found with the small temple between the fore legs of the Sphinx. This temple was probably a later erection, when the original design of the monument was not clearly comprehended. In a history of Egypt by Samuel Thorpe the temple is said to have been built by Thothmosis IV., and that his figure was represented within the temple worshipping the Sphinx. The name Sphinx in ancient dialects means "the pouring out." It is not, however, the only name by which this monument is known. Bel-hit is the most significant, and means "the Lord who cometh." Hor-em-Khon is another, meaning "the sun on the horizon," or "in his resting place," while the modern name is Abou-houl, "the father of sand,"

From these fragmentary testimonies we learn that this many-named monument, which presents to the eye a union of a human figure with that of a lion, traditionally symbolized certain blessings which something in that union brought to the earth. To the Egyptians the greatest blessings were derived from the inundation of the Nile, which begins at the summer solstice. The name Sphinx—which means "the pouring out"—(Maz-zaroth)—holds this idea. The inundation not only represented to them the submerging of the desert and the material good in its restoration to fertility, but also the religious idea of the conquest of Typhon, the desert (or evil) by Osiris, the Nile (or good). We also find that this monument became an object of worship, divine honors being paid to it, and that it afterwards represented a deified king (perhaps from such national expression of feeling as placed Napoleon among the stars as Orion the Conqueror). Our interest is in the idea which may have originated the monster. A "monster" because the Egyptians and early builders indicated the importance of a thought by the ponderousness of its representation. Therefore in its size, as well as in its form and in its worship, we must seek the thought that underlies its erection.

Let us suppose the Sphinx to have been erected at, or near, the Pyramid date, and to have been designed by its builders—whom we believe were divinely endowed with a wisdom above that of the people whom they had conquered. Let us also

remember that the pure religion of the Shepherd Kings had the same origin as that of the Egyptian idolators, both religions claiming a Noetic and Sethite source, and that it was in a certain degree astrological, although preserved from the lower forms of worship which turned the stars to deities, gave them human parts and passions, and bowed to the created instead of to the Creator. In proof of common astrological expressions, note the prophecy of Balaam, "a star out of Jacob, and sceptre out of Israel." A star is the Egyptian hieroglyph of a god, and a sceptre, of a king. So that both Israel and Egypt could read the coming of a god-king. Therefore if the Sphinx were erected by the Pyramid builders, the design may have been to symbolize a pure religious truth, although afterwards this very truth may have been desecrated by the later Egyptian mind without being entirely lost. Let us suppose this design was to symbolize an important era and to typify a future period of good. To prove this true it must combine all that Egypt has ever revered in this mysterious and solemn creature. We will examine it. The symbolical thought is the past era of the creation of the present race of men, with the promise of redemption under a coming king, and the typical thought is the future fulfillment of the promise in the reign of the king, who meanwhile conquers a peace. The Sphinx would then be an Alpha and Omega of the Pyramid thought. An Alpha in that it symbolizes the beginning of the earth's history in its week of work; an Omega in that it typifies the conquest of evil and the reign of the Lion of Judah in the earth's final Sabbath.

Taking the accepted era of this creation (I mean the completed preparation of the earth for the abode of the then created man) 4000 B. C., we find many traditions that it took place at the summer solstice. We learn that the sun at that date was at the junction of the constellations Leo and Virgo, where the bright star Denebola marks this junction. The word Denebola means the "lord or judge who cometh quickly"—(Mazzaroth), and corresponds to Bel-hit, which means "the lord who cometh," and is one of the most ancient names of the Sphinx. The commemorative monument would then unite the two

zodiacal signs of Leo and Virgo. "The Lord," who is represented by the type of the sun, is leaving Leo, the place of his kingly power, and entering Virgo on a period of humiliation, then passing through the twelve stages of redemptive work, returns finally to the glory of the king in Leo, and in his passage through that typical constellation proclaims himself the conqueror of the serpent, the bringer of all blessings, the Lion of Judah, the Omega. (Mythologically we have the Hercules, astronomically the sun in his yearly course, religiously the God-King, the Virgin born.) The rising of the Nile at the period of the summer solstice, is a sign of the conquest of evil and of the blessings of fertility conferred on the earth, through the power of the Hor-em-Khon, "the sun in his resting place." Would it then be a thought unworthy of the Pyramid builders to place before their great conservatory of truth a symbol of the sun's place at that creation, and to show in it the prophecy of a Christ without whom creation would be a curse?

We are here met by the difficult fact that the head of the Sphinx is that of a king, not even of the crowned woman of the skies, still less of the Virgin. This is susceptible of two explanations. One is to leave out the constellation of Virgo altogether, and consider the Sphinx as representing only the Lion King of Judah. This would be satisfactory were it not that the woman appears traditionally in the Sphinx, and that the Greeks, who must have had some reason for it, represent their Sphinx always as uniting a woman and a lion. To reconcile these two ideas, we consider Virgo as symbolically the mother of humanity in being the mother of a divine son in whom humanity is represented as "neither male nor female, but one in Christ Jesus." If this is objected to, the constellation Virgo may represent the humiliation of the king who humbled himself to be born of a virgin, and this humiliation he represented by the man-headed lion seated immovably upon the earth.

If the Sphinx marked this year, let us read the figurative story by the position of the sun at the solstitial and equinoctial points. To Christ leaving His kingly power in Leo, and entering the constellation of Virgo, is given the longest day.

His work has dawned upon the earth. An era, a year-day has begun. The Hor-em-Khon, "the sun in his resting place," or "on the horizon," indicates rest in the work of creation, and progress in the beginning of a new day.

To the Holy Spirit, as figured by Aquarius, pouring out the water upon the multitude of fishes—represented by Pisces—is given the shortest day, his work being then subordinate to that of Christ.

The autumnal equinox prefiguring the approaching winter of death, would be at the union of Scorpio and Sagittarius. The arrow of the archer pointing to the red star, Antares—the wounding—in the head of the serpent.

The vernal equinox, the period of hope, would be between Taurus and Gemini. The sun leaving the court of glory gathered around Al Cyone—the centre—and travelling onward to the long day of the triumph of Judah's Lion.

This year, 4,000 B. C., is worthy of commemoration. It was well done to place a symbol in imperishable stone to await the dawn of the "Day of the Lord," to gaze unmoved by friend or foe on the daily typical wonder of the rising sun.

In further confirmation of the commemoration of this era, we find its record on some ancient Egyptian zodiacs. The zodiac of Erni places the summer solstice between Leo and Virgo, and the winter solstice between Aquarius and Pisces. At the sign Virgo is placed the crowned Sphinx, over a serpent of the venomous species, with a flat head. (Mazzaroth, page 23.)

In the planisphere of Dendara, the lion is also over a serpent, but it is not of a venomous kind, having a pointed head, and therefore may represent the sun's course; a dove is also combined in the sign, the Virgin is holding a branch, but a female figure in the explanatory decan holds a child. The summer solstice is represented as being at this place by a figure holding a vase, thus representing the inundation of the Nile. To the Egyptian mind the summer solstice and the inundation were inseparable. The place of the winter solstice is marked in Aquarius by a headless horse, its well known type, so that there is little doubt that this planisphere commemorates this year. (Certain changes and indications in this planisphere sug-



gest it having been altered for a horoscope. This would not invalidate the original design in Mazzaroth, page 16.)

There is another New Year's day, still more wonderful, commemorated by the Sphinx. It is that of the Annus Magnus, the ending of which will be in the far-off ages when olams on olams shall have passed. The opening of that year would tell the same star story that has been already read, but in the progressive record of its passing months the changing position of the colures tell us that "night unto night showeth knowledge, there is no speech where their voice hath not been heard, into all the earth hath their line gone forth and to the end of the world their sayings." (Young's version.) The length of this cycle is variously given. By H. Gratten Guinness it is computed at 25,847 years, and an interesting calculation made which proves the present length of human life to equal one day of this great year. ('Approaching End of the Age,' p. 552.) There is no need to explain the precession of the equinoxes to our readers, but it may not have occurred to them to note the progressive revelation of the changing colures. Many nations have celebrated this year by the feast of the Taurobilium, our May day. Maurice says: "I have little doubt that May day, or the day on which the sun entered Taurus, has been immemorially kept as a sacred feast from the creation of the earth and man, and was originally intended as a memorial of that auspicious period." Other traditions tell us that at sometime in the antediluvian days the colures were marked by the stars: Al Debaran, the governor; Regulus, the treading under foot; Antares, the wounding, and Tom-al-Taut, the mouth of the fish. The colures had then receded from the entrance of the constellations to the positions of these stars, long known as Royal Stars. Another tradition tells of a feast which, like the Taurobilium, we still observe, was the Criobilium. This must have commemorated the entrance of the sun at the vernal equinox into the constellation Aries, the Ram. April fool's day is said to mark this change, the event probably being a surprise to the early astronomers, and the custom of sending on fools' errands told how often they had watched for the coming of the sun among the

stars of Taurus till at last they were obliged to acknowledge the fact that the equinox had receded to the next constellation. In India and Persia the first of April is the beginning of the year, and the festival of the new year is celebrated with great magnificence. We have now reached a period of this cycle in which the vernal equinox is in Pisces, the autumnal in Virgo, the summer solstice in Gemini and the winter in Sagittarius. The Sphinx still calmly watches the passing years, and may read the world's history thus:

The Vernal Equinox is the time of hope, of renewed life. The sun is at that time in the constellation Pisces, a word meaning fish, multiplying, and from the same root as the word fish in that wonderful prophecy of Ezekiel, xlvii: 9—"Everything that moveth whithersoever the rivers shall come shall live, and there shall be a great multitude of fish." This is called the healing of the Dead Sea, and "two rivers" are said, in the margin, to flow into it. In the hemisphere of Dendara, Aquarius is passing two streams, the waters of life for the fish. Does the Sphinx read the mystery that the period has begun when many shall be restored to life by the blessings of these rivers? The prophetic vision reads: "Everything shall live whither the river cometh," and that the fish shall be "exceeding many."

The summer solstice, the longest day, is now in Gemini; the sign which I read as that of Benjamin and Joseph, the two sons of the beloved Rachel. The word Gemini—*twins*—may have been adopted from similarity of sound with the name Benjamin or Ben-jemini (1 Sam., ix, 1, margin). What story will the Sphinx tell us, if not that the day has begun for the blessing of the Son of righteousness upon the divided house of Israel. Some of the stars in Gemini tell of union. One, translated from the Coptic (Mazzaroth) means "the station of the wayfaring men;" another means "the coming." Will not this age see the return of the "wayfarers," Israel's wanderers? They have the longest day, and it is *now*. The autumnal equinox is in Virgo. The humiliation is nearly over. Christ's mediatorial work is drawing to the end.

The winter solstice is in Sagittarius. This is the shortest

day, for the work of the archer is done—the dragon is wounded, we need no long day to tell that story. The explanatory decana of that constellation tell of the wounding in Draco; of the finished work in Arai; of the coming triumph in the Eagh and Lyra, for its brightest star, *Vega* (destined sometime to be the pole star) reads: “He shall be exalted.”

Month after month of this passing year the Sphinx watches. The letters of golden light write the revelation. Have we not failed to note the correspondence of the star-written story with the revelation of the *Book*? Shall the Sphinx only, in his long rest, have time to understand how “the heavens declare the glory of God, and the firmament showeth His handiwork?” When Kepler established his third law he exclaimed: “God has waited six thousand years for an observer.”

Let the Sphinx teach us a lesson; it is the same the Master taught—*watch*.

E. BEDELL BENJAMIN.

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## WHAT SHALL BE THE UNIT OF MEASURE?

AN EARTH-COMMENSURABLE UNIT BEYOND THE REACH OF HUMAN SKILL.

The methods of geodesy, or earth measuring, in their present advanced state are a marvel of human attainment in making and using instruments of precision, in eliminating errors of observation, and in determining the form and size of the earth. The measuring of angles to the small fraction of a second, and of lines many miles long to within one-millionth of their length, the ascertaining of latitude and longitude to the nicety of inches, and the running of levels across mountains and through them, the tunnels being worked from both ends and meeting accurately in the middle, and even the measuring of the earth's polar diameter within a probable error of a thousand feet,—these are a few of the modern achievements in geodesy.

But every advance in skill and science has been the means

of detecting new difficulties to be overcome before we can determine the precise form and size of the earth. Formerly the earth was believed to be a sphere, and its form certainly is so nearly spherical that its shadow seen upon the moon during an eclipse appears to our eyes to be perfectly circular. Later, the pendulum was found to beat slightly faster in high latitudes than in low, and this, with other indications, led to the conclusion that the earth is not exactly a sphere, but is spheroidal. Then many arcs of meridian were very carefully measured, and discrepancies were found in the results which could only be explained by admitting the earth to be ellipsoidal; that is, it is not only compressed from a circular form in its polar section, but also, in a less degree, in its equatorial section. Now, the ellipsoid is suspected to be slightly ovaloidal, the large end of the egg being at the south pole; but if ovaloidal, the forces which are believed to have produced this form are still at work, and are slowly changing with the precessional period, so that by and by the small end of the egg may become the large end.

Then again, close observations, many times repeated, and the most delicate experiments have combined to lead to the conclusion that the earth is not evenly balanced, nor strictly elliptical in either its polar or equatorial section, and its form is now described as *geoidal*,—that is, earth shape. (Scientists have the fashion of saying: "I do not know," in Greek;—it is easier to make confession in an unknown tongue.)

Before this geoidal shape can be formulated, we must be able to calculate the effects of volcanic and other plutonic forces which, within historic times, have very sensibly changed the topography of large areas of the earth's surface. The isthmus of Suez, for illustration, has been tilted so that the Mediterranean sea has encroached upon its northern side, ruining some of the old towns there; while, on the other hand, what is now the southern shore of the isthmus was once covered by the waters of the Red sea. The coast of Chili is several feet higher above the ocean level than at the commencement of this century; the coast of Greenland is settling. We might add almost indefinitely to the known list of chang-

ing levels, some of them extending over vast areas; but, very probably, the changes which we do not detect may far exceed those which have been observed.

If we may accept the opinion of most geologists, the earth was once a molten mass, which has been cooling and solidifying for thousands of ages, and still continues the process, causing constant shrinkage and warping of the crust. In the former molten state the earth was demonstrably spheroidal through the action of centrifugal and centripetal forces, though daily distorted by tides. But since that time, according to Mallet (see *Encyc. Brit.* article, *Geology*), the earth has shrunk, in cooling, not less than 189 miles of its diameter; and who can calculate the warpage since the earth's crust began to wrinkle into mountains, and hills, and valleys, and ocean beds; to bulge into elevated plains as in Central Asia, or to sink into vast depressions like the Great Desert of Africa? Perhaps areas, either of depression, or of elevation, may surround and include the poles of the earth. Perhaps the earth may now be gradually yet sensibly changing its polar diameter, by a changing of level like that observed on the coast of Greenland; or a more rapid change may come at any time, as on the coast of Chili; or if the earth gradually and slightly changes its axis, as astronomers suspect, that very movement, since the earth is not a sphere, would almost necessarily change the measure of the axis.

Then we may ask concerning winds and waves, sunshine and rain, electricity and chemical forces: who shall estimate the inconceivable power of these forces, or the measure of their effects upon the form of the earth?

In view of all these difficulties and disturbances, how can we expect ever precisely to determine the form and size of the earth? As Prof. Merriman, in '*Figure of the Earth*,' says, "Years and centuries must roll away before sufficient data shall have accumulated to render a theoretical discussion satisfactory in its results." President Barnard, in the same despondent tone, says that the earth's polar axis is "unknown"—that is, it is not known to sufficient accuracy to be taken as a practical standard of linear measure.

The great problem of geodesy remains unsolved, and is proved to be unsolvable. Hence an earth-commensurable unit of measure cannot now be, nor ever could have been devised by mere human skill. A unit adjusted to the much ridiculed standard of three barley corns in length, if that length has been successfully laid off on a suitable metal bar and is preserved as a standard of measure, is quite as dignified a standard as a platinum bar which tried to be—but everybody knows is not—the  $\frac{1}{100000000}$  of the earth's quadrant of meridian.

A perfect cosmic unit of measure, if such ever existed, must have had divine origin, "For vain is the help of man."

A DIVINELY REVEALED UNIT OF MEASURE IS PROBABLE.

May we reasonably hope to find a record of a divinely given unit of measure?

We do not expect to receive by revelation any truth which lies within human grasp, but if we believe in revelation at all, we must believe that it makes known every fact essential for man to know, which otherwise would lie beyond his reach. The question of a revealed unit of measure may then be narrowed down to this: have we the record in the Bible of any commands imposed by God, at any time, upon any people, or individuals, which would necessitate their use of exact measures?

We find in the Bible three notable instances in which God gave commands which required work to be made of specified dimensions. The first of these commands was given to Noah: "Make thee an ark of gopher wood." . . . "And this is the fashion which thou shalt make it of: the length of the ark shall be three hundred cubits, the breadth of it sixty cubits, and the height of it thirty cubits," &c. . . . "Thus did Noah; according to all that God commanded him, so did he."—(Gen. 5th chapter).

The next notable instance recorded is that of Moses, with whom God "communed" upon Mount Sinai during the forty days and forty nights of that wonderful interview in which Moses was showed the pattern of the tabernacle which he was to build. And a little later, "Moses was admonished of God when he was about to make the tabernacle; for see, saith he,

that thou make all things according to the pattern shewed to thee in the mount." . . . "According to all that the Lord commanded Moses, so the children of Israel made all the work. And Moses did look upon all the work, and behold, they had done it as the Lord had commanded, even so had they done it: and Moses blessed them."—(See Exodus, chapters 25 to 40).

Again, we read concerning the building of the temple: "Then David gave to Solomon, his son, the pattern of the porch and of the houses thereof." . . . [Then follow the details.] "And the pattern of all that he had by the Spirit." . . . "All this, said David, the Lord made me understand in writing by his hand upon me, even all the works of this pattern."—(1 Chron. xxviii, 12-20).

The ark was built by Noah according to directions and dimensions given to him by the Lord; the tabernacle and all its appointments were made by the Israelites, according "in all things" to the pattern which God gave in completeness of detail to Moses in the mount; the temple was built by Solomon, after the specifications which were revealed "in writing" to David, his father, "by the Spirit." In view of the explicitness of the plans and dimensions, and the strictness of the command to obey them, are we not almost compelled to infer that the unit of measure—the cubit—by which God gave the dimensions, was exactly defined in length, either by reference to one already established standard cubit, or by the revelation of a new standard? In either case its length must have been exactly communicated by God to Noah and Moses and David, or, which is equivalent, communicated directly to Noah and transmitted by him, through a fixed standard, to Moses and David.

In further confirmation of this theory we read that divers weights and measures were forbidden the Israelites, and they were enjoined, "Ye shall do no unrighteousness in judgment, in meteyard, in weight, or in measure. Just balances, just weights, a just ephah, and a just hin shall ye have."—(Lev. xix, 35-36). Now, all political experience teaches that a law enjoining just weights and measures would be a dead letter if there were no government standard of weights and measures; and we may be sure the Theocracy would not commit the blun-

der to proclaim a law without providing the means for its fulfillment. Indeed, a Theocratic form of government, destitute of a standard of weight and measure, seems an absurdity.

But, happily, the Scriptures clearly prove that the standard cubit was preserved unchanged for centuries in the most holy place, first of the tabernacle and afterwards of the temple. For the Lord said to Moses in the mount: "And they shall make an ark of shittim wood; two cubits and a half shall be the length thereof, and a cubit and a half the breadth thereof, and a cubit and a half the height thereof. And thou shalt overlay it with pure gold, within and without shalt thou overlay it, and shalt make upon it a crown of gold around about."—(Ex. xxv, 10, and following). "And the work was made by Bezaleel, the son of Uri, of the tribe of Judah, whom the Lord had appointed and endowed with wisdom and skill for the work. "And Moses did look upon all the work, and behold, they had done it, as the Lord had commanded, even so had they done it."

This same ark was deposited, centuries after this, in Solomon's temple; as we read, "And the priests brought in the ark of the covenant of the Lord unto his place, to the oracle of the house, into the most holy place, even under the wings of the cherubim." "And there (say the Chronicles) it remains unto this day." (2 Chron. 5th chapter.)

The ark of the covenant, then, the workmanship of the divinely appointed Bezaleel, made according to all that the Lord commanded Moses, and deposited in a place so sacred that none but the High Priest dare enter; was, in its cubit dimensions, a fixed and permanent standard of Hebrew linear measure. We have sufficient proof, however, that the Israelites had in common use other measures which they derived from the nations around them; but the use of strange weights and measures was but characteristic of a people who were prone even to worship strange gods.

Since God gave the Israelites a standard of measure, which they deposited as he directed, and kept unchanged for centuries, only losing it at last through their disobedience, we have strong reason to believe that the once revealed dimension is still in some safe repository providentially saved for the use of re-



stored Israel, though the Mosaic ark may have been destroyed. And since a divinely given standard unit would have permanent intrinsic value, superior to that of any other unit of measure, therefore, the cubit given to Noah was, without doubt, of the exact length of the cubit delivered to the Israelites; and Noah, or one of his sons saved with him in the ark, may have been inspired to perform the very work which would transmit the cubit of the ark, not only to Moses, but to the latest generation of men, just as Moses, by divine commission, transmitted the cubit of the ark of the covenant to David.

There is, then, strong probability that we may yet find a record of a divinely given unit of measure, which shall exactly restore to us the standard of Noah, and Moses, and David.

#### THE DEPOSITORY.

A standard measure of length cannot be preserved by a mere written description; the distance must be laid off on some durable and unchanging substance. Where, then, is a fit depository of that anciently revealed Noachian unit of measure,—some structure which dates back to the lifetime of Noah,\*—exact in workmanship,—pure for divine use,—accessible to Moses,—and preserved to this day?

We claim that the Great Pyramid of Egypt is the only structure upon the face of the earth which fulfills all these conditions. It was for 170 years (Usher's chronology) cotemporary with Noah, who, we read, lived for 350 years after the flood; its workmanship is acknowledged to be exquisite; the idol temples of Egypt were closed during all the years in which it was building, and, though it is surrounded with marks of the grossest idolatry, it is itself free from taint; it stands in the birth-land of Moses, who, as heir apparent to the throne of Egypt, had access to it, and knew the measures by which it was built, for "Moses was learned in all the wisdom of the Egyptians;" and, though marred and disfigured with age and violence, it yet retains enough of its original perfection to yield to us the secret of

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\* The lost ark of the covenant, if recovered, would not fill the gap between Noah and Moses; we must, therefore, seek a more ancient repository of measure than the Mosaic ark.

its primeval weights and measures, and the proof, if any it possesses, of divine authority.

The theory of John Taylor, that the Great Pyramid is a divinely ordained depository of weights and measures, we must conclude, then, is very strongly supported by the prior argument of probability. Now, let the confirmation of that theory rest upon the testimony which we may obtain from the Pyramid itself.

A mass of evidence has been obtained from the Pyramid in late years confirmatory of its high scientific character, astronomical, geometrical, geographical and historical; but this article will discuss only a single line of these discoveries (the one most familiar to the writer) with the purpose of finding the unit of measure deposited there. And,

1. The most prominent characteristic of the Great Pyramid is the ratio of its height to its perimeter, which is as radius to the circumference of a circle. This chief prominence of the  $\pi$  ratio demonstrates that its supreme importance to science was understood by the architect.

2. The dimensions of the ante-chamber and king's chamber, as measured by Professor Smyth, the great advocate of the Taylor theory, and confirmed by W. M. F. Petrie, the most thorough and energetic opponent of this theory, repeat the declaration of the exterior of the Pyramid that  $\pi$  is supreme in mathematics, as may be seen by the following partial list of dimensions:

	British Inches.			
	Smyth.	Petrie.	$\pi$ Formulæ.	
Whole length of ante-chamber floor,	116.37	116.3	$\frac{648}{\pi\sqrt{\pi}}$	= 116.372457+
Length of granite in floor of ante-chamber,	103.13	103.2	$\frac{324}{\pi}$	= 103.132403+
Length of king's chamber,	412.54	412.56	$\frac{1296}{\pi}$	= 412.529612+
Width of king's chamber,	206.26	206.35	$\frac{648}{\pi}$	= 206.264806+
Height from floor ("1st height"),	230.61	230.15	$\frac{324\sqrt{5}}{\pi}$	= 230.611064+
Height from base of wall ("2d height")	235.58	235.26	$\frac{648-1296}{\pi}$	= 235.470388—
Total,	1304.50	1303.82		1304.380730±

Also, the exterior dimensions of the Pyramid, as formulated by

their ratio to interior dimensions, and compared with Smyth and Petrie, are:

	Smyth's Estimate.	*Petrie's Measure.	$\pi$ Formulæ	Value.
Height of Pyramid,	5818.+	5818.6±	$\frac{32400}{\pi \sqrt{\pi}}$	5818.622870+
Length of base side,	9140.	9139.8±	$\frac{16200}{\sqrt{\pi}}$	9139.8712581+

3. The integral numbers of the ante-chamber and king's chamber dimensions, when expressed in tenths of the king's chamber width,  $\frac{648''}{10 \pi} = 20.6'' +$  (which is given in Haswell's and other tables as the value of the Memphis cubit), show that the builders of the Pyramid worked by this cubit. (See "The Proportions of the King's Chamber." By W. H. Searles, Vol. I, No. 1, Magazine.)

4. Each side wall of the king's chamber, with its perimeter of 1296 inches, and its length diametral to the perimeter, or  $\frac{1296}{\pi}$ , represents, on a scale of  $\frac{1}{1000}$ , a circle whose circumference measures one British inch for each second of arc, and whose radius is 10,000 cubits, thus correlating the cubit and the inch by means of the  $360^\circ (= 1296000'' \text{ circle})$  and  $\pi$ . (See "The Perimeter of the Side Walls of King's Chamber," p. 240, Vol. ii, Magazine.)

The prominence of  $\pi$  upon the exterior of the Pyramid is maintained in the interior chiefly by the British inch, which tells of an invisible circle surrounding every line.† Yet the cubit is the plainer revealer of the 3, 4 and 5 triangle,‡ and it interprets the  $\pi$  ratios of dimensions as perfectly as the inch, and hence puts itself in tacit dependence on  $\pi$ , and in harmony with the inch.

Two striking characteristics of the Pyramid must here be noted: first, the absence of a single full visible circle anywhere, either within or without; and second, the equally obvious pres-

\*Calculated by the ordinary methods of trigonometry, from Petrie's data, assuming the true base of the Pyramid to be at the floor level of the S. E. socket.

† Notice that the average of  $\pi$  values is between the average of Smyth's measures and the average of Petrie's, as is proved by the footing up of the columns; showing that the  $\pi$  formulæ agree with Smyth and Petrie within the probable plus or minus error of each. (For a fuller list of  $\pi$  formulæ, and their geometrical relations to each other, see 'The Argument Condensed,' vol. 1, No. 1, of Magazine.)

‡ See the article by W. H. Searles, before referred to, "The Proportions of the King's Chamber," Vol. I, No. 1, Magazine.

ence everywhere of the symbolized circle, both within and without ; for every  $\pi$  formula or  $\pi$  ratio of dimensions, intimates a circle.

The duplex measures of the Pyramid, the cubit and the inch, correlated with the circle through  $\pi$ , form a perfect allegory of the Bible. The unseen yet recognized circle whose circumference is a line without end, represents the unspoken yet everywhere recognized name of Jehovah, the omnipresent and eternal God the Father. The  $\pi$ , by whose aid alone the circle is found in the Pyramid, and which is like the circle in its infinity ( $3.1415926535 + \dots \dots \dots ad infinitum$ ), symbolizes the Son of God.

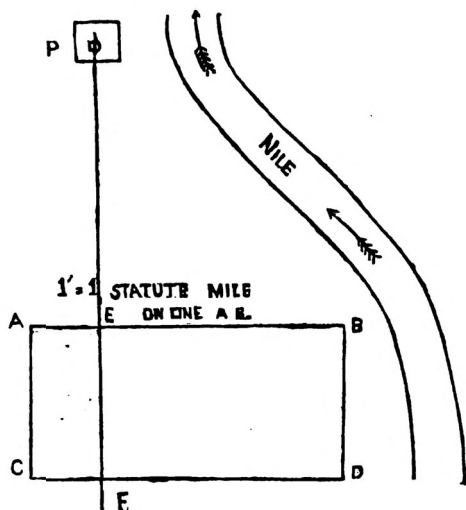
How perfectly these symbols paraphrase the 'saying of our Saviour, "No man hath seen God at any time ; the only begotten Son, which is in the bosom of the Father, he hath declared him."

The cubit, which so plainly sets forth the right angled triangle, and the inch, which everywhere publishes  $\pi$ , are symbolical ; the one symbolizes the Old Testament dispensation of law, by which every person's life was tested as with a try-square ; the other symbolizes the New Testament dispensation of the gospel, which proclaims Christ to the whole world as our Mediator. As the old dispensation has been superseded by the new, so the cubit has given place to the inch ; and just as the inch is chiefly instrumental in revealing the invisible circles of the Pyramid, so the Anglo-Saxon race, who have inherited the inch, are chiefly instrumental in the missionary work of spreading the knowledge of God, through Jesus Christ, in every nation.

THE CIRCLE OF THE EARTH WHENCE ANGLO-SAXON  
MEASURES MAY BE (WERE?) DERIVED.

The testimony of the Pyramid in favor of British measures is not yet exhausted. The 1296000 inch circle is typified on the side walls of the king's chamber on a scale of  $10^6$ . If now we consider the whole Pyramid to be on the scale of  $10^6$  we may imagine its plan view to be enlarged 1,000 times, and a rectangle 1,000 times the size of the king's chamber floor to be laid off upon the land south of the Pyramid.

The plot of the proposed survey would be somewhat like the diagram, in which the small square P represents the Pyramid, the dot in its centre marking the axis, and the small rectangle



within the square denoting the floor of the king's chamber. The site of the enlarged rectangle is shown at ABCD; it lies wholly upon the west side of the Nile, which here runs in a northwesterly course until about opposite the Pyramid, where it bends to the north. (See atlas accompanying *Description de l'Egypte*, 26 vols. In Cleveland Public Library.) The meridian distance PE will measure  $4\frac{1}{4}$  to  $5\frac{1}{4}$  miles according to the position in which a test survey shall locate the axis of the Pyramid,\* and the distance PF will be  $7\frac{1}{2}$  to  $8\frac{1}{2}$  miles. AB measures  $412529 +$  inches = about  $6\frac{1}{2}$  miles, and AC,  $206264 +$  inches = about  $3\frac{1}{4}$  miles.

Now it is a fact, according to Prof. Stockwell, that the parallel of latitude in which the British statute mile equals one minute of longitude, lies from 5 to 8 miles south of the Pyramid. No one can calculate the exact location of that parallel from present data, for the reason, as shown in the first part of this paper,

\*Prof. Smyth places the axis about in line with the overhanging top of the south wall of the grand gallery, and due north from the coffer, but Petrie locates it in line with the north edge of the great step.

that no one knows the exact size or form of the earth. Our general knowledge of these is accurate enough to assure us in locating the parallel as somewhere between the north and south boundaries of the rectangle ABCD, and we cannot with entire certainty be much more definite than this. Yet, as we shall see, a special survey of that rectangle might determine almost exactly where it is crossed by the parallel of latitude whose arc between AC and BD measures one British mile to each minute.

The Pyramid here offers an exceedingly delicate test of the theoretical length of its inch, for its axis will yet be located with great precision. Probably the formula will be found which will determine its exact distance from the king's chamber. When that shall have been done, the rectangle ABCD may be laid off from the Pyramid within the tenth of an inch of its theoretical position, while the enormous variation of *three miles* would change the inch by only  $\frac{1}{2000}$  of its length; for, to near approximation, cosine of latitude CD : cosine of latitude AB :: length of one minute of arc on CD : length of one minute of arc on AB :: .867331 : .866897 :: 1.0005 : 1 :: the inch derived from the parallel CD : the inch derived from the parallel AB.

The rectangle ABCD offers peculiar advantages for geodesic work. An instrument placed at C, for instance, and adjusted to the meridian, will sight an object on the line AB about 100 inches east of the point A, because of the convergence of meridians, and each inch at this distance of 206264 + inches from the instrument of observation will measure one second of azimuth.—May not the azimuth of a very small arc be read off more accurately from a distant base line than from the limb of the instrument?

If an instrument should be placed at A and sighted to C, it would point slightly east of south; if another instrument were placed at B and cited to D, it would point slightly west of south. Let instruments so adjusted be turned upwards, and each note the time of transit of the same equatorial star; the instrument at the eastern station, B, would note the transit slightly *after* the star had passed the meridian of B, but the

instrument at the western station would note the transit slightly *before* the star would reach the meridian of A, so that the star would cross the line of each instrument almost simultaneously.—May not the principle of simultaneous transit, observed from a measured rectangle, suggest the most accurate method of measuring an arc of longitude?

The north side, AB, of this rectangle possesses such peculiar advantages for a base line for geodesic work, and coincides with such accuracy to the minute-mile ( $1' = 1$  mile, or 5,280 feet) circle of latitude, that it may be taken to mark the circle of the earth whence Anglo-Saxon measures are derived. The modern British inch varies at most but very slightly from the  $\frac{1}{63360}$  (the number of inches in the statute mile), of one minute of arc on the line AB, and it is possible that the overruling Providence which has guarded it for these 4,000 years may have guided modern legislation to an exact restoration of its primitive length.

The earth standard to which the unit of measure in the Great Pyramid thus appears to refer itself, if divinely ordered, is doubtless cosmical, but in what respect does not yet appear. But whatever the import, or whatever the intent of the Pyramid architect may have been, if the topography of the land indicated by the rectangle ABCD is favorable for accurate survey (of which I am not sure), and the geological formation is suitable for permanent monumental work, then the parallel of latitude passing through the base-line, AB, within the limits of the arc AB, would be a perfectly feasible standard line of earth reference for our system of measures, whereas the use of quadrants of meridian of the earth, which differ in length, or the earth's polar diameter, which we cannot measure with sufficient accuracy, are entirely impracticable.

If our investigation were to stop here we should be led to decide that the cubit of Noah and Moses and David, the cubit of the two arks—the ark by which the human family was kept from extinction at the time of the flood and the Mosaic ark of the covenant—was the 20.6+ inches cubit by which the Pyramid was built. This seems to be the natural inference from our argument, and we might not be without the support

of authority if we were to assume the Mosaic cubit to be 20.6 inches. Yet, such may not be the necessary conclusion, as is proved in a letter just received from Rev. H. G. Wood, in which he shows that other measures as well as the 20.6 cubit and the inch are correlated through  $\pi$  with the 1296000 second-inch circle. Perhaps the so called sacred cubit of about five times five inches may be among the correlatives, and superior to all others, and divine appointment may have made it commensurable with the earth's polar diameter at a specific date. But these things are not yet proved, and so, for the present at least, our inch is the safe, the satisfactory, the earth-referable, the pure unit of measure, the emblem of Christianity, and we ought to keep it until it shall have fulfilled its period and announced its successor. At some future time, however, we may correct the inch if we shall prove it to have deviated in the least from its primeval value.

J. H. Dow.

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## STRUCTURE OF THE BASE.

This article will bring our review of Mr. Petrie's recently published work ('Pyramids and Temples of Gizeh') to a termination. We propose in this article to generalize a little, and give a clear and candid statement of our own theory of the general form and structure of the base from our own data, as the result of our very extensive calculations and researches, and a thorough consideration of all that has been written by Prof. Piazza Smyth, Vyse, French Expedition, and the recent work of Mr. W. F. Petrie, and Pyramid literature in general. In the previous papers of this review we have scrupulously kept to our work of reviewing Petrie, accepting and testing his data, and endeavoring to explain his facts, as set forth by himself, by giving them the most probable interpretation. And this motive has led us to put forth a number of theories, based on his own facts, of the structure of the Pyramid's base. In the following article we propose to set forth our own conception of the original base, untrammelled by Petrie's theories or explanations,



as the result of our long and unwearied researches on this theme. We have kept our mind open to everything that has been urged in favor of and against the so called Pyramid theories, and we have given due weight to all that has been said by friend and foe alike. We have not pinned our faith to anybody's teaching, but have done our own reading, thinking and investigating. Our researches have been conducted *de novo*, as if nothing had ever been done by anyone, and the theory we now propose to set forth is unbiased and free from every taint of prejudice.

Mr. Petrie opens out his exposition, on page 37, by citing the materials available for a discussion of the original size of the base of the Great Pyramid: (1) "The casing *in situ* upon the pavement, in the middle of each face; (2) the rock-cut sockets at each corner; (3) the levels of the pavement and sockets, and (4) the mean planes of the present core masonry." He then proceeds to notice that, "On reducing these observations to give the mean form of the core planes at the pavement level, it came out thus:

Core Plane Sides.	Socket Sides.
N. 9002.3	9129.8
E. 8999.4	9130.8
S. 9001.7	9123.9
W. 9002.5	9119.2
Mean 9001.5	9125.9
Mean difference 1.0	4.4 "

Mr. Petrie comments on this result as follows: "Here, then, was another apparently unaccountable fact, namely, that the core masonry was far more accurate in its form than the socket square. It is, in fact, four times (4.4 times) as accurate in length, and eight times (20" against 162") as accurate in angle. This forced me to the conclusion that the socket lines cannot show the finished base of the Pyramid."

"The clue which explains all these difficulties is—that the socket corners vary from a true square in proportion to their depth below the pavement, the sockets nearer the centre being higher."

"This means that the sockets were cut to receive the foot of the sloping face, which was continued right down to their floors, beneath the pavement. (See Plate XI.)"

"Hence the sockets only show the size of the Pyramid, where it was started from varying levels, which were all *under* the pavement; and its true base *upon* the pavement is therefore 26 or 30 inches inside the lines of the sockets."

We have given Mr. Petrie's theory in his own words; and it is the most synoptical and comprehensive statement of his whole theory, of the structure of the base, to be found in his work. It will be seen from this statement that the pivotal idea in this theory is the location of the sockets. Their varying levels are the result of the unevenness of the rocky floor or foundation. The socket corners, he says, do not give a true square, the sides from socket to socket being longer and shorter according as the sockets are nearer the centre. The sockets nearest the centre have the shortest diagonals and the shortest sides to their square. We think it cannot be disputed that almost every measurer of the Pyramid's socket distances has acknowledged this leading fact, that the distances from one socket corner to another are not all exactly alike, nor are any two distances exactly the same. A fair and candid statement of this leading fact is demanded from every one who undertakes to write upon this subject, or to set forth any theory of the structure of the base and the length of its sides.

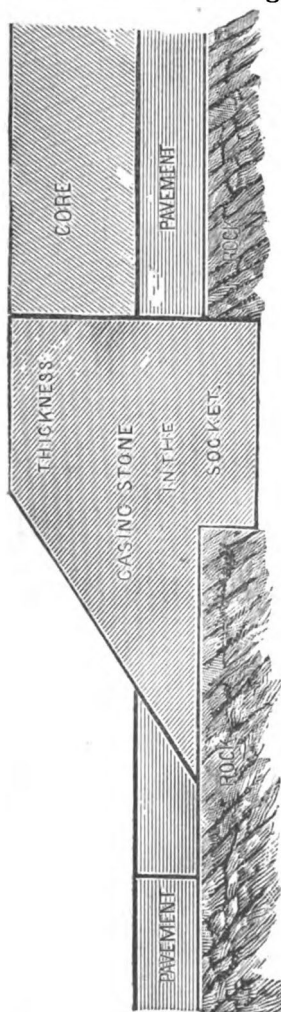
The pivotal idea in any theory must be the location of the socket corners and their significance. Any explanation of the structure and size of the base would be worthless in the end, without a true theory of the location and significance of the sockets.

#### THEORY OF THE SOCKETS.

We begin, then, with a theory of the sockets. We say it candidly, but we say ~~it~~ modestly, that the common and popular theory of the sockets is erroneous and misleading. It has been the fruitful source of all the wrangling which has been indulged in by Pyramid measurers and writers since the days of Herodotus, but especially within the last half century, and more recently since the days of Taylor and Professor Smyth. Th

popular theory is set forth in Mr. Petrie's statement given above, "that the sockets were cut to receive the *foot* of the sloping face, which was continued right down to their floors beneath the pavement."

Our theory is different. We consider the sockets were cut to receive the *heel*—and the *heel only*—of the sloping casing, and that the foot rested on the solid rock beneath the pavement, as shown in the following diagram.



In this theory the *heel* of the corner stone is in the socket, and the foot of the casing rests upon the same level floor as the pavement; whilst the backing of the casing is variable—thicker and thinner according to the situation of the stone in the alignment of the side. In the middle it would be a thicker backing than at the ends of each side, near the corners.

This theory is more architectural and consistent with the general theory of the structure and alignment of the sides. The corner stone of each angle must have a foothold and foundation in which it can rest, and resist any expansion of the diagonals and sides, and thereby firmly hold the sides and centre in their places. The corners of a building hold its sides together, and if the base had been built on the platform without the corner stones being imbedded in a socket, the sides would expand and slide out of place and position.

The prominent feature of this theory of the sockets is the extension of the foot and toe to any desired length, and the opportunity it gives to slide the socket backwards along the diagonal to any desirable distance, whether

for convenience or for symbolic purposes. Hitherto the four shallow sockets have been regarded as the ancient outer corners of the base; whereas the theory we now suggest considers that the ancient and original casing *overlapped* the sockets, and that the ancient base is not defined by the sockets, nor do the sockets give any truthful idea of the actual alignment of the base sides which *overlapped* the sockets at each of the four corners of base. We believe that a closer examination of the sockets, and for some distance beyond them, will confirm every feature of this new theory of the sockets and their significance. We shall not attempt to enumerate the numerous proofs which have led us to this result. All we can do, at present, is to generalize a little, and condense our statement as much as possible.

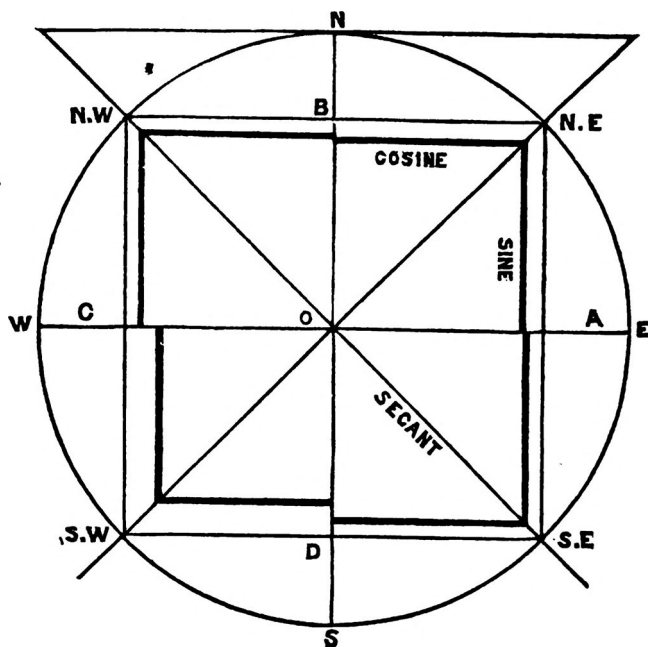
In our previous papers we have spoken of a *geometrical* base, which was taken as a standard and guide, in distinction from the supposed actual builders' base, of the Pyramid as it was originally built. This geometrical base we have always spoken of as the model theoretical base = 9139.8712581 British inches,

with the formula:  $\frac{180^2}{2\sqrt{\pi}} = \frac{16200}{\sqrt{\pi}} = 9139.8712581$ . This ge-

ometrical base we now declare to have been the *actual original* base-length of the Pyramid, which the builders adopted as the *only real actual base*, as well as being its geometrical and standard base. We have introduced the following diagram in former articles embodying this conception, showing the relation of the core masonry to this base.

The *outer* square is the geometrical base of the Pyramid, which we regard as the *actual* square base of the Pyramid = 9139.8712 British inches to a side. If we estimate this geometrical base in time-factors of the equinoctial years—better known as the so-called Pyramid inches of Professor Piazzi Smyth—each side will be 9131.055 of these inches. And it is our firm and intelligent conviction that this is the only true theory of the Pyramid's base, and will be proven to be such by every competent exploration expedition that will be sent there in the future. Professor Piazzi Smyth's theory, when reduced to proper formulæ expressed in British inches, will outlive every other. The theory we now present assumes that the outer square is a

true representation of the perfectly square base of the original,



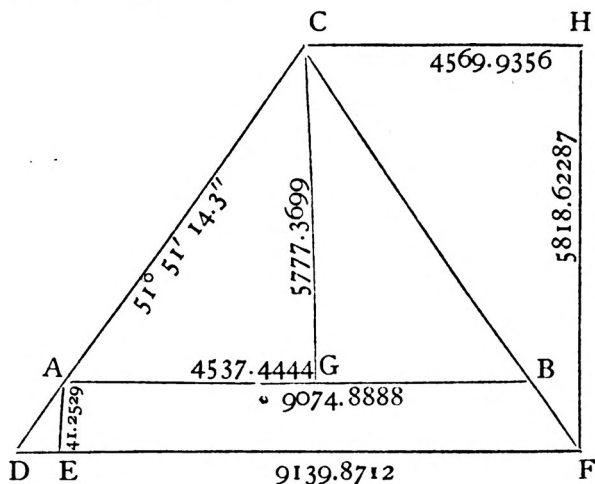
with sides of equal length = 9139.8712 British inches. The original base was a perfect square.

We now turn for illustration to Petrie's estimate of the core masonry and the thickness of the casing. We can only find space for a consideration of averages in this article. Speaking of the thickness of the casing, Petrie says: "If the angle on the south side were the same as on the north, the casing thickness, would be 69.2 on the south. This, therefore, seems to make it more likely that the south side had about the same angle as the north."—p. 43. We, of course, do assume that the angles of the faces on the north and south were the same; therefore we should accept the thickness of casing so given, namely, 69.2 inches. This, of course, is an average. It is thicker in the middle than at the corners, where it is thinner. Now look at the result:

N.	9002.3
E.	8999.4
S.	9001.7
W.	9002.5
Mean	9001.5
$69.2 \times 2 =$	138.4
	9139.9

Add the allowed thickness of casing, which is an *average*, to the *average* length of the core masonry, and the result gives the base side length we have given—9139.8712 British inches—the value of the geometrical base-side.

Now, let us try it in another way. We hold that both theory and fact require the *height of the pavement* to have a theoretical height of 41.2529 British inches, and that it is equal to the height of the basalt pavement in front of the eastern face of the Pyramid. Let us now calculate the length of the base of the Pyramid at this level.



AB, top of pavement,	9074.8888.
CG, vertical height,	5777.3699.
DF, lowest base,	9139.8712.
AE, height of pavement,	41.2529.
FH, total height,	5818.6228.
DE, thickness of casing,	64.9824.

Radius : 4537.4444 :: tangent  $51^{\circ} 51' 14.3''$  : 5777.3699 = CG.  
And by adding the height of platform we get 5777.3699 + 41.2529 = 5818.62287; whilst  $5818.6228 \times \frac{\pi}{3} = 9139.8712$ ,

the base. Hence it follows that the true theoretical core length of sides must be 9074.8888 inches, instead of 9001.5 as given by Petrie; whilst the average thickness of the casing—taking thick and thin together—will be theoretically 64.9824 inches, instead of 69.2 as given by Petrie.  $9139.8712 - 9074.8888 = 64.9824$  inches.

The theoretical views presented in our former articles were all based on the acceptance of the common theory of the sockets, as being the actual corners of the original base, and on the supposition that the socket levels were the actual levels of the original base. We accepted the theory of the author of the book we were reviewing as a matter of duty, and gave the only probable solution from that standpoint. But it may now be seen that we do not accept the author's theory of the socket corners, nor the conclusions he draws from the premises. And we accept no other theory but the one herein set forth, namely, that the casing stones overlapped the socket corners, and that nothing but the heels of the corner stones were placed in the sockets. The sockets originally held the corner stones of the casing, but they only held the heel of the stones, the entire fore-front of the sloping part of the stones overlapped the socket, forming a step or foot resting upon solid rock at the same level as the pavement foundation. The sockets did not define the alignment of the original base by the exact amount overlapped by the fore-front and foot of the stones.

There are proofs of this overlapping whose significance has been overlooked. The Royal Engineers in their survey and measurements of the sides, in 1874, gave 9140 inches for the length of the south side base. And they did so because they measured the southwest corner at a spot where the casing had overlapped the socket by over 17.5 inches on the western side. Petrie noticed this fact in these words: "NOTE.—This south side is stated as 9140. Now the outer west edge of the socket-block at the southwest is 17.5 beyond the drawn line (which really defines the socket), and it is therefore about 9140 from the southeast corner; hence, this was probably taken as the corner, and 17.5 must therefore be deducted from the Royal

Engineers, measure of this side in comparing it with other surveys."

In other words, when properly understood, the overlapping foot of the corner stone at the southwest corner was about 17.5 inches beyond the socket in which the heel of the stone was placed. But the western edge of the casing stone or socket-block had overlapped or stepped 17.5 inches beyond the socket so obviously that the marks of its overlapping were taken by the Royal Engineers as evidence of the actual position of the corner; and they measured from that spot, and found the side 9140 British inches. A closer measurement would have given our theoretic value 9139.87125 inches, or 9141.055 of Prof. Smyth's time factors, or equinoctial time inches.

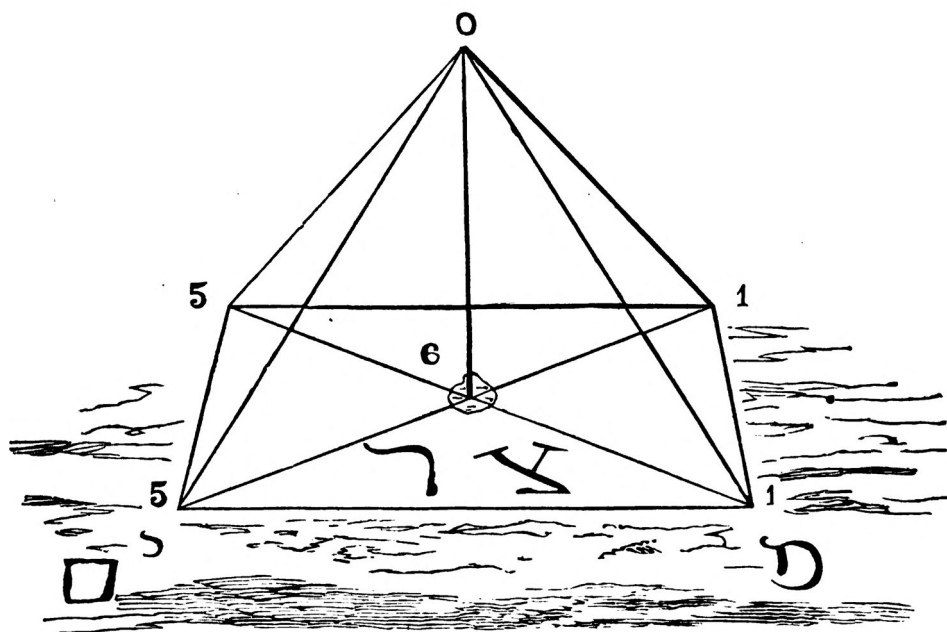
The original base of the Pyramid was a perfect square of 9139.87125 inches to a side; the geometrical base was its true base—its actual base—the builder's base, and the only base it ever had. The socket levels have been taken to indicate the actual length of the sides of the original base in some recent reviews of Petrie's book, our own articles included; but whilst we admitted the socket levels as data for computing the base sides, and tested their significance in the course of our duty as reviewer, yet we do not hold the socket levels to have the significance which Mr. Petrie has given to them; and therefore, the influences drawn therefrom are comparatively worthless, whether drawn by him or others. We predict that Prof. Piazza Smyth will yet be vindicated and the Pyramid theory be triumphant; and the formulæ, which the leading members of the Institute have adopted and worked efficiently in their researches, will be accepted as the only reliable Pyramid formulæ as a guide to Pyramid measurements, and in exposition of its plan, design and structure.

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# A CRITICISM ON MR. PETRIE'S LATE PYRAMID MEASURES.



To test the value of Mr. Flinders Petrie's late work on the Great Pyramid, we, fortunately, have a common objective point in the measures of Colonel Howard Vyse, Piazzi Smyth and his own. Working from this, we can ascertain, to some extent, the true condition of some of his conclusions. We are, also, fortunate in having the carefully prepared chart of the Pyramid, issued by the Society. This chart is made up from the actual measures of various parties, especially those of Col. Vyse and Piazzi Smyth. In many respects their measures are in common, those of Col. Vyse having been verified by Prof. Smyth. Prof. Smyth pronounces the measures of Vyse, when tested for verification, "admirable" and "incom-

parable." It is thought that this encomium should carry with it a degree of confidence in those measures not tested by Prof. Smyth, made and reported by Col. Vyse. There is justification in this, because, on examination of the measures of Mr. Petrie as to interior work, he quite closely follows the measures of Smyth and Vyse, with Smyth's angles; in fact, with such a plus and minus quantity attached as to bring such measures within the fair assumption that the measures of Vyse and Smyth can be taken as justified by him. As to the Society's chart, it has this great advantage, viz.: it has a discovered origin of the measures by which the construction of the Great Pyramid was made, the standard unit of measure, which was our "Imperial British inch," and the number of such inches going to make one of the cubits used in Pyramid construction, viz.: 20.62647 such inches. This number, as 206264 seconds, is the radius seconds of the circle of 360 degrees. The proof of this is to be found in the measures of the coffer of the ante-chamber, and of a number of prominent lines of measure; and this proof is set forth in 'The Formulæ' of Mr. Dow, published in the Proceedings of the Society. Part of the system of construction has been discovered to have been that the measures were, for the most part, designed to indicate diameters of circles, the circumferences of which were integral quantities; and from which, among other consequences, astronomical measuring data, are inferential.

Such being the status, then it was found that the reported measures of Vyse and Smyth, with others, could be used for reconstruction, enlisting in their use everywhere harmony and symmetry under such a system. This is displayed in this chart. Indeed, the work is so carefully done, and so faithfully, that the lines everywhere close with each other, the interior working co-ordinately with the exterior, and *vice-versa*, throughout; and this, let us repeat it, with the use of the actual measures and angles furnished. It has been conceded by those who have tested the work that such fitting and harmony, such symmetry and adaptation, could only come from the fact of the recovered use of the architectural design, and the measures actually intended and made use of.

This is the material we possess for testing the work of Mr. Petrie; and, with this preamble, we will commence :

(1) With a discussion of the restoration by Mr. Petrie, of the descending passage way, or entrance passage. The data given us are: Mr. Petrie restores (1) the location of the passage and its dimensions by measures and angles; (2) he makes the connection of the passage with the mass, so as to give its relation to the exterior slope, and the vertical axial line, which he fastens as passing vertically through the peak, or gable ridge, of the queen's chamber; (3) because the 19th course of masonry is of a vertical thickness sufficient to admit the mouth of the entrance within that thickness, he postulates it that this is to be received as a *datum* of construction, and consequently works to this end as one of proper reference.

It is a happy thing for us that Mr. Petrie gives the height of the entrance passage, perpendicular to its incline, the same with that given by Prof. Smyth, viz: as 47.24 to 47.26 inches. Prof. Smyth computes this as 47.24 inches. The Society's chart gives it as 47.25419656 inches, deriving it from a  $\pi$  modulus, and from the origin of the Egyptian measures. This last, then, is our standard of reference to compare by.

Mr. Petrie gives the angle of the passage as  $26^{\circ} 29' \pm 1'$ , and  $26^{\circ} 27'$  with a mean difference of  $4'$ . Prof. Smyth gives a number of observations of this angle, taken by different modes, in which we find  $26^{\circ} 27'$ ,  $26^{\circ} 27' 58''$ , and  $26^{\circ} 28' 16''$ . The angle found by the Society chart is  $26^{\circ} 28' 24.10''$ , and this we take as our reference for a standard.

It will be seen that, so far, the variation from the reference standards adopted is so minute as to be practically *nil* in the distances to be affected by the reference.

This brings us to the measured dimensions of this passage way; (1) for its full length, and (2) for the distance from the mouth to the intersection of the first ascending passage way.

And as to this :

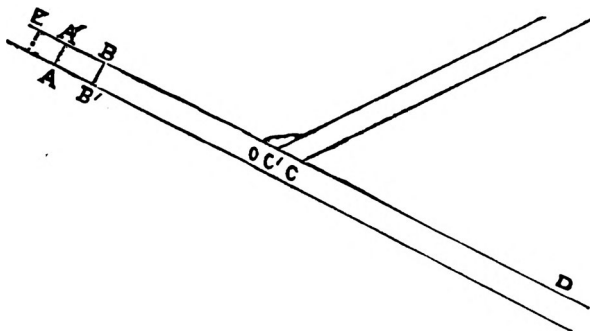
(a) Colonel Vyse, measuring from the outward edge of dilapidated roof of the passage, downward, gives the total length as 3850 inches. Mr. Petrie gives the same, practically, as 3856 inches, with, however, this statement of the measure :

"3825 to 3856 inches," presenting a + or — of 31 inches to go on for exactitude. He adopts, however, 3856 inches, and on this makes the total length 4143 inches—"end of sloping roof 4137, Vyse, corrected for casing." Mr. Petrie does not pretend to exactitude in these, his actual measures, but as is seen is quite liberal. As to this he says: "For the total length of the entrance passage down to the subterranean rock cut part, only a rough measurement by the 140 inch poles was made, owing to the encumbered condition of it. The poles were laid on the rubbish over the floor, and where any great difference of position was required, the ends were plumbed one over the other, and the result is probably only true within two or three inches." This statement, with the somewhat enormous (for good measuring) limit of difference of 31 inches, can, it is thought, make us feel a greater confidence in the more carefully stated work of Colonel Vyse of 3850 inches. In other words: the giving of a greater and less than Vyse, with an admitted carelessness of measure, and a probable error of "two or three inches," which we must take as a reduction from his extreme maximum, or  $3856 - 3 = 3853$  inches, may make us feel, it is thought, an increased confidence in the measure of Col. Vyse.

(b) We now come to the connection of the entrance passage way with the exterior slope of the structure, which involves the ideal restoration of the dilapidated outside and its connection with the ascending passage way. This matter is of extreme importance, as by it Mr. Petrie places the whole interior passage and chamber work with reference to (1) the sloping outside, and (2) the vertical axial line of the Pyramid proper. He pronounces his work fit for future reference, as reliable, as worthy of taking precedence of all who have gone before him, the French, Col. Vyse, Prof. Smyth, and others; and here, certainly, we have one of the most important results of his work, and one which should be able to bear a tolerably severe scrutiny.

Prof. Smyth measured from the broken terminal end of passage way, from joint to joint, to the intersection of the ascending passage way, and in doing this so joined his work with that

of Col. Vyse, that we are able to find a joint in common between them. Mr. Petrie follows these measures with the like result, so that we have a common objective point, or joint, for the three.



Col. Vyse commenced his measures from broken edge of roof at B, giving total length BD as 3850 inches. (The edge of the roof stone B is broken and uneven, and for a finish may have projected beyond its present face.) From B, he says, to the junction of the first ascending passage way (that is, to the "break out" at O,) is 758 inches. Prof. Smyth, measuring from A, or edge of basement sheet, gives AB' as 162.3' inches. Then from A' (A'B being equal to AB') to C', that is, "from basement beginning to joint 18, situated up in a hole which is the continuation of the 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.

It is to be seen that the point O is at the "junction" of Vyse, or the "break out," and Col. 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 particular points of beginning to measure. It is from these data that, it is thought, the location of the point C can be recovered approximately.

Col. Vyse gives  $BD - BO = 3850 - 758 = 3092$  inches, as the distance OD. Take 2061.2 inches, plus its half, or 1030.6 inches, and we have 3091.8 inches. By Col. Vyse, 3092.0 inches. Difference  $\frac{2}{10}$  of an inch. Therefore the distance OD seems to be 150 Turin cubits, for the Turin cubit is 20.612 inches.

Prof. Smyth gives  $OC'$  as 60.2 inches, and  $C'C$  (measuring from the basement beginning, as "1022.2—963=59.2 inches") as 59.2 inches; or  $OC' + C'C = 60.2 + 59.2 = 119.4$  inches. Then  $CD$  would equal  $3091.8 - 119.4 = 2972.4$  inches, or 247.70 feet. By calculation Col. Vyse's measure of this would be 247.71 feet, or 2972.62 inches. On careful consideration this distance was taken as 247.752659 feet, or 2973.0319 inches, which might lessen  $OC'$  or  $C'C$  by the amount of 1.2 inches; about the amount of the difference between Vyse and Smyth mentioned, viz., 1.4 inches (above). The reason why this slight increase was made, was because it was found, in the adjustment of lines and angles, to serve as a solution of position for many interpretations of measures. (1) By it the distance from the intersection of the floor line of the ascending passage way with the roof line of the descending passage way to the vertical axial line was found, in feet, to be the square root of 63360, which is 5280 feet, or our mile measure, multiplied by 12. (2) By it, on the geometrical determination of the length of the ascending passage way, this was found to be 123.68300698 feet, while by the extraordinarily carefully taken measures of this length by Prof. Smyth, he makes it 123.683 feet. (3) This measure so obtained was found to give a deductive time measure of a most magnificent character, viz., of the solar and lunar elements going to make up what is called the "Metonic Cycle." Indeed the authority in reconciling reconstruction, for this step was ample as justifying it.

Now reversing, or going back, we have,  $D$  to  $C = 2973.0319$  inches, then  $C$  to  $O = 60.2 + 59.2 = 119.4$  less, 6319 equal 118.7681 inches; or,  $2973.0319 + 118.7681 = 3091.8$  inches, and this plus the 758 inches of Vyse (or  $OB$ ), equals  $3091.8 + 758 = 3849.8$  inches. The common objective point is  $O$ , and from  $O$  to  $C'$  is 60 to 60.3, say 60.2 less 6319 inches.

Mr. Petrie gives, (1) From restored casing surface, on floor, to basement edge 124.2 inches. Then from edge of basement to joint 18. or  $C'$ ,  $1106.13 - 124.2 = 981.93$  inches; which Prof. Smyth gives as 981.9 inches. To same point by Vyse, there is a minus of 1.4 inches, as stated. From this we have, practically, an agreement of measure for Vyse and Smyth and Petrie of the distance  $A'C'$ , the distance  $A'B$  being 162.3 inches. There is no dispute that  $C'$  is the intersection of the roof line of the ascending passage way into the roof of the descending passage.

Col. Vyse makes the total restored length of the entrance passage "about 4126 inches." Because 200 Nilometer cubits are  $20.62647 \times 200 = 4125.294$  inches, this is taken as the true measure on the Society chart. We have then for the length of restoration by Vyse, from edge of basement sheet to outer face of restored casing,  $4125.294 - 3849.8 = 275.494$  inches, less 162.3 = 113.194 inches. By this the total length of the descending passage way is 200 Nilometer cubits. From O to D 150 Turin cubits, and from O to E 200 N. cubits less 150 T. cubits.

Mr. Petrie gives the restoration as 124.2 inches. Difference  $124.2 - 113.194 = 11.006$  inches, as Petrie's excess over Vyse, for restoration. That is, Petrie makes the mass this much larger than Vyse. A slant rise of 11 inches indicates a base of about 10 inches, and for two sides of Pyramid this would indicate for Petrie's enlargement of base over Vyse's  $10 \times 2 = 20$  inches.

By Vyse, or rather the Society chart,  $DC$ , as said, is 2973.0319 inches, then from  $C$  (the intersection of the floor line of the ascending passage with the roof line of the descending passage) to E must be  $4125.294 - 2973.0319 = 1152.2621$  inches. The extension of the floor line for restoration is referred by a plane perpendicular to incline of passage, to the roof at E.

As seen, this is in practical agreement with Smyth's joint measures, and the location of the point  $C'$ , to within 1.5 inches.

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NOTE.—Prof. Smyth finds a difference of something over an inch in the two lengths, on one or the other side, of the passage ways. By the Society chart the length of the descending passage way is 543.7745 + feet, and the base for this in-



*The Unveiling of Isis.*



THE UNVEILING OF ISIS.

The object of the picture is to show the Divine origin of our Flag—the BANNER OF ISIS—and of the children of *Isis* or EVE, and the rise of the Gospel Kingdom or the Kingdom of the Son of Isis (Eve), that is, of Jesus of Nazareth—*Daniel* ii : 44.



## *The Unveiling of Isis.*

THE GOVERNMENT OF THE UNITED STATES IS ISRAEL RESTORED.—*Baldwin*.  
THE KINGDOM WHICH JESUS CHRIST CAME TO ESTABLISH ON EARTH IS THE UNITED STATES OF AMERICA.—*Jesse H. Jones*. SEE 'PROPHETIC VOICES CONCERNING AMERICA.'—*Charles Sumner*.

**LEGEND.**—The picture represents or portrays a period of Prophetic History from the year 1492 to the year 1881 and beyond—that is, from the triumph of the Cross over the Crescent under Isabella, Queen of Spain, to the surrender at Yorktown and the rise of the United States of America and beyond, or from the "creation or revelation of the new heavens and the new earth" to the fulfillment of the "sign of the coming of the Son of man in the heavens"

The sign or symbol in the heavens represents a woman or church clothed with civil power; her crown, "a new Constellation" upon earth, the fruit of her work with the Moslem power under her feet. The sign is also Astronomical, representing the Sun in the constellation of Virgo or Isis, the Virgin (month of September); her crown, the Corona Borealis; the Moon under her feet, as the hand of the clock, marking the day of the month or the hour of the consummation of the symbol, after the flight of the woman or church to the wilderness on the wings of an eagle, namely 1st, the 7th O. S. or 17th N. S. of September, 1643, the rise of the United Colonies of New England at the time of the Puritan Revolution and the first struggle "for Christ's Crown and Covenant;" and 2d, the 7th-9th 17th of September, 1774, the rise of the United Colonies of America, the child of religious persecution, the sign or symbol of "a new constellation," *the Stars and Stripes*, "the Pillar of Fire"; marking the beginning of the second struggle "for Christ's Crown and Covenant."

As the principal angels or messengers of the woman or Church in bringing forward the new kingdom there stand three men, Christopher Columbus, Martin Luther, and George Washington, the personations of three saints—St. Christopher, St. Martin, and St. Michael; the impersonation also of three mythological characters, put forth as prophecies by our forefathers in Egypt—Serapis, Bacchus, and Hercules—typified by three birds, the Dove, the Swan, and the Eagle: 1st, the Messenger or Revealer of "the New Heaven and the New Earth;" 2d, the Angel of the Reformation; 3d, Michael, or the Godlike, the Conqueror of the Dragon. The periods of their work, 1492-1499, 7 years; 1510-1517, 7 years; 1774-1781, 7 years. Behind the first are seen the Three Ships, like Doves, in the port of the "Holy Saviour," San Salvador. Behind the second is the burning of Huss (the Goose), from whose ashes sprang Luther (the Swan). Behind the third is the surrender of Cornwallis at Yorktown.

**NOTES.**—Jan. 2, 1492, the silver cross, the grand standard of the Crusaders, was hoisted on the tower of Camares at the Alhambra, above the Crescent. Jan. 6, Day of the Epiphany, the feast of the Magi, Ferdinand and Isabella made their solemn entry into the Alhambra with great pomp.—*Spanish History*.

2. The Moon, the symbol of the Moors and other Mohammedan nations, and is used upon their banners.

3. Isabella (symbol)—The beautiful Isis—The worshipper of God—*The Church*. "By Isabella was accomplished the grand event of European policy, the expulsion of the Crescent; and through Isabella the most prodigious event of humanity, that which doubled its terrestrial domain." "It seems as if heaven had raised her for two purposes—the overthrow of the Crescent and the discovery of the NEW WORLD."—*Spanish History*. "Without reservation I declare that Nature has never produced, and that Providence has never crowned with a diadem, a woman who can compare to Isabella, the Catholic."—*Bishop R. S. de Arevalo*. "IN THE WORLDS OF OUR PLANETARY SYSTEM THE SUN NEVER CLOTHED OR ILLUMINED HER EQUAL."—*Cardinal Ximenes*. A woman, the Church—the English Church—clothed with the civil power, Elizabeth or the beautiful Isis, the antitype (symbol).

## *The Unveiling of Isis.*

4. "For behold I create a new heaven and a new earth," etc.—*Isa-iah*, the prophet of *Isis*, lxxv: 17; Rev. xxi: 1. Discovery of the *New World, the land of Isis*, Oct. 12, 1492.

5. "And then shall appear the sign of the Son of Man in heaven."—*Matthew* xxxiv:30.

6. "AND THERE APPEARED A GREAT WONDER IN HEAVEN, A WOMAN CLOTHED WITH THE SUN, AND THE MOON UNDER HER FEET, AND UPON HER HEAD A CROWN OF TWELVE STARS."—*Rev.* xii: 1. The sun represents the civil power clothing Isabella or Elizabeth; also clothing the Church; the crown represents the twelve colonies.

7. Virgo, or Isis, one of the twelve signs of the Zodiac, represented as a Virgin holding in her hand the first fruits of the harvest; also a Lotusflower, or a Maiaflower. The Lotus is sacred to Isis.

8. The Corona Borealis or Northern Crown, Isis Crown, or Ariadne's Crown (stars in circular form), a constellation in the heavens called the Virgin's Crown. The new constellation" Symbol of the United Colonies and States.

9. The woman fled into the wilderness \* \* on the wings of a great eagle."—*Rev.* xii: 6, 14. The symbol of a ship or ships in which the pilgrims fled. The Mayflower sights land Nov. 9th, Old Style, or 19th, New Style. It is the day that Isis finds Osiris. The compact in the Mayflower, Nov. 11th, O. S., 1620—Advent day, Luther's day, St. Martin's day, Bacchus' day—the fulfillment of the wonderful myth of Isis and Osiris born in a LOTUSFLOWER, ISISFLOWER, MAIAFLOWER, OR MAYFLOWER. "IN THE CABIN OF THE MAYFLOWER HUMANITY RECOVERED ITS RIGHTS." \* \* \* "HERE WAS THE BIRTH OF POPULAR CONSTITUTIONAL LIBERTY."—*Bancroft*. The great expedition of those who fled with John Winthrop in many ships from persecution, had for its flag-ship the great ship, Eagle, changed to the name of a noble woman who sailed in her—*Bancroft*. John Winthrop was chief magistrate of the United Colonies of New England.

10. September 7th, O. S., September 17th, N. S., 1643. The Moon under the feet of Virgo. The Sun clothing Virgo.

11. Signing of Articles on Sept. 7th, O. S., 1643, on Trimountain, Shaumut, the place of living waters—Boston, THE BETHLEHEM OF THE NEW WORLD—house of the Sun, of obedience, of Ceres or Isis, and of Bread. "This confederation was the child, which grew into a youth, and now waxes toward manhood as the United States of America."—*Charles W. Elliott*. "According to my calculations there only remains one hundred and fifty years to the coming of Christ."—*Letters of Columbus*. "This was a time of great expectation; the colonies looked for the 'second coming of Christ.'"—*Bancroft*. The New England Confederation of 1643 was the model and prototype of the North American Confederacy of 1774."—*John Quincy Adams*. *Fulfilled on the present site of OLD SOUTH CHURCH, BOSTON*.

12. Passage of Covenant September 17, 1643. The signing of the Scotch Covenant by the House of Commons and Assembly of Divines, in St. Margaret's Church, London, September 25, 1643.—*Carlyle*. "Christ's Crown and Covenant," inscribed on the banners of the Covenanters.—*Scotch and English History*. Sept. 17, 1630—Foundation of Boston; Sept. 17, 1643—Rise of United Colonies of New England; Sept. 17, 1774—First Declaration of Independence by Congress; Sept. 17, 1796—Washington's Farewell Address; 1787—Adoption of Constitution.

13. September 7, 1774.—First prayer in first Congress. Reading of Lessons in Prayer-book for the seventh. Special prayer for Boston and Suffolk County Convention in assembly. Remarkable scene in Congress, September 9, 1774.[9 A. M.—Central day of the symbol or sign, the Sun clothing Virgo. The Northern Crown rising. The Moon at the feet of Virgo—*Astronomical Calculation*. September 9, 1774.—"On the wisdom and on the exertions and on the fortitude of this important day is suspended the fate of the New World and of unborn millions."—*Joseph Warren*, in the Suffolk County Convention.—*Bancroft*. Passage of virtual declaration of independence. Answer to the Prayer of the Nation in Congress assembled. September 17.—Anniversary of the rise of t

## *The Unveiling of Isis.*

United Colonies of New England, also of the founding of Boston—Presentation to Congress of Act of Suffolk County Convention by Paul Revere. Passage of Resolutions sustaining the Act. (First Act of Congress promulgated.) (Wonderful scene in Congress.)

14. *Isaiah* lxvi; 8. *Sortes Biblicæ*.—"Samuel Adams. BIRTH OF LIBERTY FULFILLED SEPTEMBER 9, 1774, IN MILTON, MASS., IN HOUSE NOW STANDING. 15. "*A new constellation*." Act of Congress, June 14, 1777. 16. *Exodus* xiii: 21. The first banner made by Elizabeth Griscom, and afterwards by her daughter, Clarissa Claypole. 17. "Christ's Crown and Covenant," the watchword of 1643 and 1774. See Bancroft.

18. Christopher Columbus, bearing the Rod and Staff of Isis, upon which is the child of Isis, on the cross of Isis. St. Christopher, or SERAPIS, the god of navigation, from Hispalis, or Tartessus, Tarshish, the Christ-bearer, a saint whose mission was to carry the Saviour across the water—the mysterious prophecy of the early and middle ages, of the one who was to come in person as the real Christ-bearer Dove. The colossal statues of the saint with the infant Jesus on his shoulders, crossing the waters, were numerous until the advent of Christopher Columbus, of whom St. Christopher was the patron saint and namesake.

19. Martin Luther, the second Elijah, from Eisleben, (the Life of Isis,) the Bacchus of the myths, the god of *Liberty*, not of *License*; holding the *Life*, the Book of Isis, LIBERTY. St. Martin, noted for his work of the destruction of Paganism. He went about throwing down altars, idols and images. He was especially noted for his benevolence and charity to the poor. He was the prophetic saint of Martin Luther—his patron and namesake. A goose is eaten on St. Martin's day. Luther was christened on St. Martin's day.

20. George Washington, of VIRGINIA, the land of Isis or Virgo, whose symbol is St. Michael or HERCULES and the dragon, the defender, the sword of Isis of the seed of Isis, bruising the serpent's head. St. Michael, the defender and saviour of the King's daughter, the Church, the patron saint of the Jews, the conqueror of the dragon, Michael—"like unto God, or Godlike," represented with shield and lance, the prototype of George Washington. Note following curious words of Rabbi Wise, of Cincinnati, to the Jews of America, 1860: "We need not look beyond the messiahship of George Washington."

22. The crest of Columbus, three doves (argent) in blue field, with words above, "Faith, Hope, and Charity." The bird or messenger of the Holy Spirit and Cross, and of Isis.

23. The crest of Luther, a swan. He was called "the swan of EISLEBEN, or of the Life of Isis,"—the trumpet bird—type of the prophet.—*Isaiah* xxvii: 13; lvii: 1. *Rev.* xi: 15.

24. The crest of Washington, an eagle, (the national bird,) indicative of the warrior, with shield, blue field, with three silver stars, and four stripes, alternate white and red, horizontal, the color of the symbol in the heavens—the Stars and Stripes.

21. It was the custom in the early and middle ages to portray persons having holy missions with birds' heads, their types, and they were painted with birds' heads. St. John was painted with an eagle's head. St. John the Eagle Prophet.

25. "God made me the messenger of the 'new heaven and the new earth,' of which he spoke in the Apocalypse of St. John, after having spoken it by the mouth of *Isaiah*, and he showed me where to find it."—*Letter of Columbus*.

26. "I do believe that I am that great trumpet which prefaces and announces the coming of our Lord."—*Words of Luther*. Michelet. Luther the angel of the Reformation. See Elliott and Barnes, and many other commentators. "And I saw another mighty angel come down from heaven, clothed with a cloud, and a rainbow was upon its head, and his face as it were the sun. \* \* \* In his hand a little book open, \* \* \* and when he had cried seven thunders uttered their voices, \* \* \* and he lifted up his hand to heaven and swore \* \* \* that there should be time no longer, or but a time."—*Rev.* x. A time, 360—364 years. Era of Reformation, October 31, 1517.

## *The Unveiling of Isis.*

27. Michael.—*Rev.* xii: 7, 8. Washington. "This is he who was raised up to be not the head of a party, but the father of his country.—*Bancroft*.

"FAME SPREAD HER WINGS AND WITH HER TRUMPETS BLEW—GREAT WASHINGTON IS NEAR! WHAT PRAISE HIS DUE?

WHAT TITLE SHALL HE HAVE? SHE PAUSED, AND SAID NOT ONE, HIS NAME ALONE STRIKES EVERY TITLE DEAD."—*Sam'l Haven*, 1789.

28. Discovery, 1492-1499, seven years. "In seven years I accomplished this work, by the Divine will."—*Columbus*. 29. From Luther's call to Rome to publication of Theses, 1510-1517, seven years.

30. From Washington's entrance to Continental Congress to the surrender of Yorktown, 1774-1781, seven years. Surrender of Yorktown, October 17th to 19th, 1781. 31. Isaiah lx: 8, 9.

32. The burning of John Huss. "Are you going to burn a goose (Huss); in one hundred years you will have a swan (Luther) you can neither roast nor boil."—*Huss' words at the stake*.

33. End of the war. "Servant of God, well done."—*Milton*.

"These are the living lights,  
That from your bold, green heights,  
Shall shine afar,  
Till they who name the name  
Of Freedom, toward the flame  
Come, as the Magi came  
Toward Bethlehem's Star."

—JNO. PIERPONT.

"O trembling faith, though dark the morn,  
A heavenly torch is thine;  
While feebler races melt away  
And paler orbs decline,  
Still shall the fiery pillar's ray  
Along the pathway shine,  
To light the chosen tribe that sought  
This Western Palestine."

—OLIVER WENDELL HOLMES.



cline is 307.727248 feet. If the distance from *C* to exterior was 1152.621, less .7 of an inch, or 1151.562 inches, then we would have this remarkable fact, viz.,  $307.727248 \times 1151.562 = 3543670548$ . or, numerically, the exact time measure of the synodic lunar year of 3543670548 days! And this requires only a differentiation of  $\frac{7}{10}$  of an inch, which is within the limits of Smyth's; which shows that this measure, for differentiation, is to be found in the breadth of the passage. The proportion is a natural one, lying in the comparative measures of the same diagram. It is as follows: 343.7745 : 307.727248 :: 1151.562 to the corresponding base of the small triangle; which, necessarily, would be 3543670548, or the year measure, divided by 343.7745, which, as radius minutes of 360 degrees, is 3437.745 minutes.

What makes this the more remarkable is this: The Society chart finds the length of the floor line of the ascending passage way to be 123.6830069 feet (Smyth 123.683). Differentiate this as 123.682684, by a difference of .0003 of a foot. The synodic lunar month has 29.5305879 days. Then, if the tropical solar year of 365.24224 days be divided by this, the quotient will be 123682684!

It is marvelous that two lines of two connecting passage ways should, when referred to their point of junction, show such exact relations as to *the same time period*, viz.: the synodic lunar month, used in one instance as a factor of the tropical solar year.

This is the more remarkable because, with the very ancients, the fundamental basis for astronomy was this synodic lunar month and year, and in the measure of 247.7526 feet, below this same point of intersection, is to be found the exact measure of the famous Metonic cycle, by means of the use of the elements of this cycle, as follows:

Two hundred and thirty-five lunar months of 29.5305879 (it is elsewhere taken as 29.530887) days, each amount to 6939.688 days. Nineteen tropical years of 365.24224 days each amount to 6939.602 days. The difference for this—the Metonic cycle—is .086 of a day. But taking the *lunar week year* of 364 days, then 991 weeks, of seven days each, amount to 6937 days,

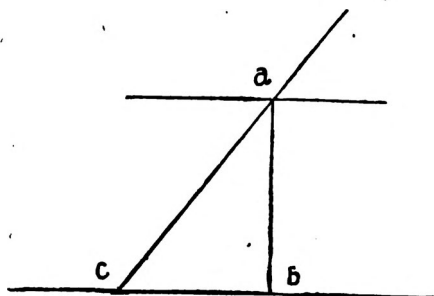
showing a difference from nineteen tropical years of 2.602 days. Now, 991 *weeks* are just 247.75 *months* of 28 days each, and this architectural Pyramid line measure is 247.7526 feet. Here, if we take the continued decimal figures 26, beyond the 247.75, to indicate the 2.6 days over of difference, then with this intercalation the periods agree to within .003 of a day in nineteen tropical years!

Now, all these measures of time periods, founded on the *synodic lunar month*, are thus found to radiate from one and the *same intersecting point* of these passage ways. For the basis of the small triangle we may have  $307.727248 : 343.7745 :: 1031.32 : 1152.129$ , and  $307.727248 : 343.7745 :: 1030.6 : 1151.324$ ; by which we see that the changes on its base for differentiation are closely connected with the cubit values in inches, viz.: 20612, the half of which is 10306, and 206264, the half of which is 103132 inches. These strange showings seem to point to the use of the diagonal joint across the floor of the descending passage way, so emphatically dwelt on by Professor Smyth.

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To resume: Mr. Petrie, having "fixed the original position of the door-way of the Pyramid," gives a table of measures of the descending passage way, or entrance passage, p. 55; and, for the *connection of the ascending passage*, he measures to the intersection of the floor line of the ascending passage way with the floor line of the descending passage way.

To compare his work with Vyse's and Smyth's we will have, as a preliminary step, to refer his work and measures to the intersection of the floor line of the ascending passage way with the roof line of the descending passage way. For this we make the following diagram:



The point *c* is the intersection of the floors of the passages; *a* is the intersection of the floor line of the ascending passage with the roof line of the descending passage way; *ab* is perpendicular to the incline of the passage. The angle *b* is  $90^\circ$ ; the angle *c* is  $26^\circ 28' 24.10''$  plus  $26^\circ 6' 16''$ , or  $52^\circ 34' 40.10''$ . Then the angle *a* is  $37^\circ 25' 19.90''$ . The height *ab*, or side of the triangle, is 47.254 + inches. Then we have

$$\sin c \ 52^\circ 34' 40.10'' = 9.889918.$$

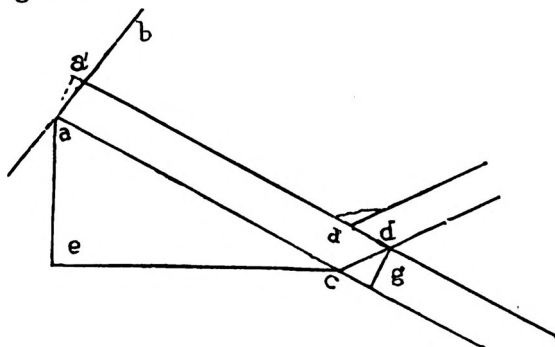
$$\sin a \ 37^\circ 25' 19.90'' = 9.783675.$$

$$\text{Log. } 47.254 = ab \quad 1.674402.$$

$$\text{Log. } 36.15 = bc \quad 1.558159.$$

So, to the distance down the passage to *c*, 36.15 inches are to be added to transfer the measures from *c*—the intersection of the floors—to the point *a*. By this *ac* becomes 59.5 inches. Professor Smyth calls it 60 inches.

With this preliminary step we can take up Mr. Petrie's measures of the descending passage way to the intersection of the ascending passage. He gives the following measures applying to this diagram :





The point *c* is by Mr. Petrie in vertical height above the pavement, 172.9 inches. The point *a* is, for same, 668.2 inches. Then the vertical distance *ae* is  $668.2 - 172.9 = 495.3$  inches. With an angle of  $26^{\circ} 28' 24.10''$ , on the Society chart, the vertical height has the proportion to the slant length of the descending passage way of 153.2476 to 343.7745 feet. From this, with the vertical height 495.3 inches, of *ae*, the slant length *ac* must be 1111.09 inches. To refer this to *d*, the length 36.15 inches will have to be added, making the distance *a'd* (equal to *ag*), to the intersection of the floor line of the ascending, with the roof line of the descending passage way,  $1111.09 + 36.15 = 1147.24$  inches, as the measure of Mr. Petrie. By the Society chart this distance as stated is 1152.262 inches. By Mr. Petrie, then, this measure is 5.022 inches shorter than by Vyse, while he has added, to complete casing, 11 inches in excess of Vyse. (In his tables of measures, Mr. Petrie gives the measures of length as follows: From finished casing to edge of basement sheet 124.2 inches, thence to intersection of floors of passages 986.44 inches; sum 1110.64 inches; which shows a difference from the above of .45 of an inch. Add 36.15 inches, to refer to *d*, and we have  $a'd = 1146.79$  inches).

While, therefore, the length of this passage to this intersection is closely the same, with these measurers, yet the difference of 5.022 inches is sensible. It must be accounted for in the effort to close the vertical axial line, passing through the peak of the queen's chamber, with the mouth of the passage being located in the 19th course of masonry. For as to actual measures Mr. Petrie agrees with Smyth and Vyse. He says, page 56: To joint 18 (Smyth) 1106.13 inches. Deduct from this 124.2 and we have 981.93 inches, from edge of basement sheet to joint 18, while Smyth's measure is 981.9 inches. And Mr. Petrie commenting, says: "It will be found that his (Smyth's) measures make the passage length about an inch shorter as an average;" which shows that Mr. Petrie considers his actual measures, practically, as agreeing with those of Mr. Smyth. And on this we may postulate a guiding working fact. When actual measures are given, Mr. Petrie's work must be judged by them.

(c) Such being the status, then we have the following simple criticism on Mr. Petrie's work.

His length  $a'd$  is 1147.24 inches. Deduct 124.2, "restored casing," and we have 1023.04 inches. Smyth gives  $dd'$  as 59.2 inches to "joint 18." Deduct this and we have 963.84 inches, as the resulting and necessary distance, by Mr. Petrie, from edge of basement sheet to joint 18. By Vyse the length  $a'd$  is 1152.262 inches. Deduct 113.194 "restored casing," and we have 1039.068 inches for the same distance. Deduct 59.2 inches and there remain 979.868 inches for the same distance. Smyth gives this by actual measure, as 981.9 inches, and Petrie, by actual measure, as 981.93 inches. (The difference between 979.868 and Smyth's 981.9 or 2.032, may be corrected by making Vyse's restoration 111.162 in place of 113.194; correcting his 758 to 760.032 inches, Smyth's being 659.4 inches).

Compare Petrie's 981.93 with his necessary 963.84; the difference is 18.09 inches! By this the conclusion is inevitable that Mr. Petrie has forced a shortage of 18 inches, on the actual measure from edge of basement to joint 18, by suppositions and ideal distances. As this shortage must be corrected to the actual measures, then, necessarily the same shortage, or 18 inches, will have to be deducted from the ideal addition for restoration, because between the same limits. Deduct, therefore, this 18 inches from the 4143 (because by actual joint measures he agrees with Smyth and Vyse) inches, or his total length of passage, and there remain for this necessary correction 4125 inches; while by Vyse the passage length is "about 4126 inches," and by the Society chart, the same is 200 N. cubits or 4125.294 inches!!!

This result, however astounding, is the absolute outcome from Mr. Petrie's own data, and cannot be gainsaid. It follows from this that all he says as to the vertical axial line passing the apex of the queen's chamber has no foundation in fact from his own work. From what will hereafter be shown, quite similar to the above result, the solution of the matter seems to be this: Mr. Petrie seems to be following and confirming the measures of Col. Vyse, and, necessarily, those of the Society chart, to those who have the proper interpretation

of his work, or who will give it a careful investigation, while to the casual or careless investigator he interposes these confusing and perplexing blinds of detail and surface results by statement and in terms of measures. This section of examination can pertinently be closed with the quotation *Ex uno disce omnes*.

(II.) Leaving this branch of his work, Mr. Petrie has introduced to, or rather has intruded on, the inquirers into the construction of this work two surprisingly novel features.

(a) He deliberately cuts down all former measures of the length of the base side by some 30 to 40 inches. (See chap. vi.)

(b) He has found that the lowest core masonry course (specializing the one on the north side) *curves from the outer corners inward toward the centre*, so that at the centre the distance from, and perpendicular to, the chord of the arc to the centre of the curve is some 37 inches.

Now it must be borne in mind that the casing stone, (or casing stones) found in place by Col. Vyse is nearly at the centre. So, if this novel feature is truly the case, then if the lower and outer edges of the casing stones were, for position, lined on the chord of the arc, and if at the centre the casing stone found by Vyse showed a flat top thickness of some 51 or more inches, this 51 inches would thin out, as the curves extended toward the corners, to be only some 14 inches. By which, if the length of the base side was estimated by the conditions of construction of this casing-stone, at the centre, *in place*, against the core masonry, then, indeed, the true length of the base would be much less than the one apparently indicated by the casing stone with its flat top of some 51 inches in thickness; the curvature inward from the corners having been left out of account.

The feature is a novel one, and, if true, justifies such a result, unless, as would most naturally be the case, the curve of the core course should practically be a templet, by following which with uniform casing stones, or nearly so, the finished polished outside of the casing would follow the curve of the templet, by which no such lessening in thickness would take place. In all probability this stated feature of curvature does not exist. It would hardly have escaped notice in the many

careful examinations made of the base and core masonry. The rubbish heaps over almost the whole line of the base, with the corners of core broken away almost to the heaps, is quite a strong testimony and argument against the *ipse dixit* of Mr. Petrie.

But here, nevertheless, the assertion of this novel feature is a very important help, and in fact necessary to sustain the equally novel assertion of Mr. Petrie, viz: that all who have gone before him have erred materially, not only in their measures "between sockets," but also of "the present existing core masonry." So pat and necessary is this newly found curve, which no other Pyramid structure has, to the sustaining of Mr. Petrie's results as against all who have gone before him, that the assertion has all the appearance, at least, of a convenient invention to satisfy a theory calculated to mislead and confuse, as well as to silence criticism—in order that for the future Mr. Petrie's work may, on such statements of facts, be accepted as the standard guide in Pyramid studies. Mr. Petrie's statements may be true, and if true ought to be received. But Mr. Petrie's work, where trial can be made as to its accuracy, does not bear the test of careful examination; and this certainly tells badly in regard to his other assertions, especially where they seem to be so inconsistent with the recognized mode of Pyramid structure in Egypt. To this it should be added that the Royal Society have urgent and cogent reasons why the true measures of this Pyramid should not be commonly known, testified to by its treatment of Prof. Smyth, and by the actions of its various employés, among whom may be numbered the servants of the British government, notably Sir. Henry Somers, at the head of the Royal Engineers, with the subordinates of the Palestine Exploration, and, innocently enough, the wealthy and philanthropic Miss Coutts. These reasons are so sound enough from their own peculiar standpoint, and as to them, where A, a very notable person, has a particular scientific knowledge of extraordinary value, it may be that, rightfully enough, he will endeavor to fudge, confuse, and mislead b, c, d, e, and many others of the smaller letters of the alphabet, who in their ill-timed researches threaten to make the grand discovery. Experi-

ence of this sort of thing might lead one to ponder on the expression *Timeo Danaos et dona ferentes*, and even to fear that a Trojan horse might be being thrust into the apparently peaceful assembly of earnest inquirers, even though some were saying, "Yours faithfully." Proof that this sort of procedure is in vogue could be given. It is well enough even in a peaceful pursuit, when the object is a universal in place of a caste good, to be wise as well as industrious.

Mr. Petrie gives the length of "the present existing core masonry," on the north side, on page 38 of his work, as 9002.3 inches, and as calculated from his diagram, Plate X, as 9014.6 inches. This assertion is as astounding to those who have been in the habit of referring to the labors of the French savans under Napoleon, of Col. Vyse, and of others, as his assertion on which this one follows as a sequence, viz: "When reducing my observations (by triangulation, a mode suggested by the employés of the Royal Society, to insure success) after the first winter, I found that the casing on the north side lay about 30 inches inside the line joining the sockets." This is the fundamental *datum* on which all his work is based, and we have to accept it upon his mere say so, because he gives us no means of testing his work of triangulation. Triangulation is a high sounding term, but the detailed work of observations may, as any expert will admit, easily cover gross errors; especially likely in the hands of one who can so blunderingly err with the plain measures of the descending passage way. Mr. Petrie has given us no modes of test save that of seeing how his own results appear upon their merits. To do this, notwithstanding his assertions of the "ought to be" sufficiency of his statements, he has afforded us no other course to pursue than to test his results and statements even by those who have preceded him. Like Malaprop, they have gone before, and he *is preceding them* by a clean reach over.

In Mr. John Taylor's 'The Great Pyramid,' we have as follows: Mr. Nathaniel Davison was the British Consul at Algiers in 1763. He frequently visited, examined, explored and measured the Pyramid. "He found the side of the base (existing core masonry) of the Great Pyramid to contain 746 Eng-

lish feet," or 8952 inches. "Davison's measure received, in 1798, a most satisfactory confirmation from the labors of the French *savans*. Having measured the apparent base of the Great Pyramid twice, viz., from east to west and again from west to east, with a good measuring chain, receding for that purpose 100 feet toward the north, but still keeping on a line parallel with the base, M. Jomard found the length of the Pyramid from one visible angle to the other to be 745.8 feet, English," or 8949.6 inches. Again: "The dimensions of the Great Pyramid, according to Mr. Perring, the surveyor employed by Col. Howard Vyse, are as follows:" and among them "The present base 746 feet," or 8952 inches.

Against this core masonry, near the centre, Col. Vyse found a perfect casing stone in place. It had a flat top of about 51 inches to the beveled surface, in horizontal thickness. Mr. Petrie finds this same casing stone in place, and gives as its measures  $62 \pm 8$  inches on top, and  $108 \pm 8$  inches on bottom, with height of 57.6 to 58.6 inches; and we may accept this measure because made for a special purpose of comparison. (Page 43.)

Col. Vyse made the former base with the casing stones 764 feet, the French 763.6 feet, and the survey under the Sultan 763.5 feet. The difference between 764 and 746 is 18 feet. This would show that the bottom thickness of casing stone was underestimated by Vyse, and really as Petrie gives it for correction, or else that the core masonry for the east and west termini of the north side was by Vyse found to be greater than he gives it. At any rate, these are the data we have to go on to test Mr. Petrie's work.

The difference of 8952 and 9003, or 9014 inches, or 51 or 62 inches, is too large not to attract especial attention, where the challenge is made against such parties as the French, Col. Vyse, and the engineers of the Sultan. It is too great for good surveying to admit of the conflicting measures being taken as of equal probable worth for obtaining a mean of measures. It is of so much importance that such a change on the former measures, especially by a single man, should make it incumbent on him to state accurately and systematically his mode

and details of work by which the conflicting result was obtained. The failure to do this may of itself fairly raise a reasonable doubt as to the rightness of his results. Manifest errors in other parts of his work would but add to this right and reasonableness of doubt.

But the matter becomes of curiously emphasized interest when this difference of 51 or 62 inches is found to be, in the first instance the measure of the flat top of the casing by Col. Vyse, and in the second instance the measure of the same by Mr. Petrie himself. That is,  $8952 + 51 = 9003$ , and  $8952 + 62 = 9014$  inches.

Still stranger and more remarkable if we take for use Mr. Petrie's measure of the bottom thickness of the casing stone, or 108 inches, as the correction of Col. Vyse's statement, which we have the right to do, as he expressly avers that this is the average measure of the Vyse casing stone. If we add twice this, or 216 to 8952, we have 9168 inches, or the base side length of Col. Vyse!! And this showing is nothing more nor less than marvelous when we take it into consideration with the similar condition of results found in the measures of the descending passage way, unless, indeed, we explain away the mystery by the simple discovery that Mr. Petrie, under cover of a confusion of statements to mislead, is really refinding, confirming, and correcting the results of Col. Vyse. The results are clearly here under our very eyes, and so plain that a running man may read them. In the first instance, his own work shows the measure of 4125 inches, Col. Vyse's being "about 4126" inches, and here, in the second, his own work shows a measure of 9168 inches, also that of Col. Vyse!

Indeed there seems to be no escape from these as right conclusions from the measures, save by the "hollowing" or inward curvature of the core masonry as alleged by Mr. Petrie. For 8952 is a much less measure than the 9003 of Mr. Petrie. and the casing thickness (which he corrects to 108 inches) of at least  $99 \times 2 = 198$  inches, is admittedly set directly against this, making a base side length of at least 9150 inches, which is an excess of the measure of Mr. Petrie. The "hollowing," or inward curvature, would satisfactorily account for this otherwise

insuperable error of statement by Mr. Petrie, provided he could show that the lowest outward edge of the casing was lined by the chord of the arc of curvature, which, however, he does not do; for the evidences do not exist, leaving the matter open to the statement of any desired opinion however far removed from the truth.

Mr. Petrie means necessarily to aver that the width of the core masonry at the centre, and at the Vyse casing stones, must be  $9129.8 - 198 = 8931.8$ , or else  $9129.8 - 216 = 8913.8$  inches, which fact escaped the French, Col. Vyse, and all others who had preceded him, because of lack of observation of the "hollowing," or inward curvature, spoken of—which really makes the corner measures too thin.

As to this matter it seems to be but a fair presumption that had Mr. Petrie "reduced his observations" on the ground, and at the time of taking them, quite a natural use of his spare time, he would have found that he himself was the party in error. The difference was so great that it should have suggested, when found, a careful review and repetition of his work, which, however, he did not make. The importance of difference was so great, in view of its setting aside so much valuable and painstaking work of such distinguished men, that, in his own behalf, for modesty's sake and for the work's sake, it is natural to conclude Mr. Petrie would take the greatest pains to show clearly, plainly, and in satisfactory detail, the proof. He did no such thing, but to the contrary gives us a work vague in its statements everywhere; and reference is made to his work as a proof of this. He however places all investigators in the awkward position of trying to prove a negative. Any assertion of "You did" may be made, but it is very difficult if not impossible to prove that one didn't. Hence the care that Mr. Petrie should have taken, as a faithful and honorable searcher after the truth. It certainly is the truth that, on comparison, the labors of Col. Vyse and those of Prof. Smyth present an honest simplicity quite foreign to those of Mr. Petrie; and this is the more to be observed in view of the somewhat dictatorial terms in which Mr. Petrie sets aside as no longer of any authority the measures of these gentlemen.



(III) The last matter to be noticed in this criticism, as to which Mr. Petrie presents novel and strange features of measures, is in reference to the vertical height of the upper and outward edge of the basement sheet above the base of the Pyramid. He gives the measure as 611.2 inches. The vertical height of restored lower lip of mouth of entrance passage, 668.2 inches, agreeing practically with his given level of base of the 19th course of masonry.

Col. Vyse gives height of edge of basement sheet as 588 inches above the base; and by the Society chart, with this and the length of the passage, with the angle of Smyth, viz.,  $26^{\circ} 28' 24.10''$ , the vertical height of outer and lower lip of mouth of passage is made to be 638.9 inches. How Col. Vyse found this the writer does not know, but judges it to have been by leveling from the base of casing stone, both objective points being in view, viz., base of casing and edge of basement sheet. It seems incredible that so great an error as 23.2 inches could be made by a competent and practical engineer in simple leveling for so small a height, with the termini in view, and in a field presenting few difficulties. The mode was simpler and better calculated to give a right result than by taking levels of masonry courses at corners three hundred and eighty feet distant, the intermediate space of courses being unknown for thickness because covered by rubbish. It would seem that, naturally, great pains would be taken to get this height accurately, as on it would depend the only mode for connecting the interior with the exterior. In this regard Mr. Petrie has introduced a new departure almost as startling as in the other instance mentioned, and because of the accumulation of such novelties, they appear as they accumulate, simply because they do so accumulate in his hands more and more incredible. There are too many of them, and appear Munchausen. His work is, by pronouncing these severe and many excesses of errors upon all his predecessors, subversive of all work done, former data being the guides; and the thought will rise that it is for the accomplishment of such a result, and to breed confusion, that his work has been set on foot, elaborated and published. Still his averments may be true, though probably false, and they must have the benefit

of the doubt. His statements in this last special regard can only be pronounced upon after taking a new set of levels by parties competent and trustworthy. If the height of the edge of basement sheet is such in fact as that its extension could end in the 19th course of masonry, then, because the thickness of this course would admit the mouth of the passage, Mr. Petrie's reasoning as to this matter seems sound and good. In fact, in all the novelties he advances, this one has the most to commend it as being reasonable and probable.

J. RALSTON SKINNER.

May 8, 1884.

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## THE UNVEILING OF ISIS.

### VI.

In order that my readers may clearly understand the meaning of my work, I have had engrâved a copy of the picture embodying my thought, and publish therewith the notes attached so that they may have a synopsis of the whole subject for reference, whilst they have the detailed narrative of how I arrived at my conclusions.

As a whole, the picture represents the BIRTH OF LIBERTY. These three men, who stand in the foreground, are as the Magi who came to the birth of Jesus ; they had seen his star or constellation in the east, and, being led by it, had come to worship him. These men, angels, or, in plain terms, messengers of the Most High, came to worship or assist at the birth of Christ's kingdom. The message to go and find the new world was given to the messenger of the new heaven and the new earth—the Christ-bearer dove—on 'the 6th day of January, 1492. This day is called in Spain the Feast of the Kings, or the Feast of the Magi. This day was at one time observed as the birthday of the Saviour. It was a fitting anniversary ; and it was at this time that there might be seen streaming from the tower of Camares at the Alhambra the cross above the crescent.

All Christendom rang with the news of the downfall of the crescent, and great celebrations and rejoicings were ordered by the Pope, and, curiously enough, at the same time came the expulsion of the Jews, as if Isabella, the great queen, had said: Go, seek your asylum in the new world, where my messengers have gone before to prepare a place for you. And then, when the St. George arose in the person of Cromwell, being at the very time when Columbus had said, "*by my calculations there remain but 150 years to the consummation of all things,*" the poor oppressed Jew sent a deputation to him, saying: Art thou our Messiah, or do we look for another? It was not until the third one of the group appeared upon the scene, MICHAEL, the God-like, that the representative Jew of the United States, said: "My brethren, *you need not look beyond the Messiahship of George Washington.*" The three men represent the north, the centre, the south—the Anglo-Saxon, the Teuton, the Latin and, strangely too, the types of all were alike; each one stands six feet, with eyes of blue, and chestnut hair. And, singular for Spain, Isabella, a woman of wondrous beauty, had auburn hair and blue eyes. Roselly de Lorgues describes Columbus as "tall, well formed, head large, aquiline nose, small, light-blue eyes—grayish; majestic presence and great dignity." Luther is described as tall, large—not portly, dark blue eyes, dark chestnut hair. Washington, tall and well formed, blue eyes—grayish, chestnut hair.

There is a curious combination of sevens concerning them. The word *Columba*, the true name in Italy, has seven letters; some historians spell the name of Luther as *Leuther*, in which case there are seven letters; and in the name of *Washington*, or *Wessyngton*, the *ton*, or *town*, is a suffix, and the meanings of the words seem to suit their vocations, taken with the birds which are their crests. *Columba*—dove—is a messenger, and the dove is a proper symbol for the work he had to perform and suitable to what he called himself, "I am the MESSENGER of the new heaven and the new earth," etc.; and again he says, in his memoirs, "*Seven years* was I accomplishing this object in accordance with the divine will," that is, from 1492 to 1499. And the word *Leuther* is FREEDOM, in other words, LIBERTY,

and the swan his emblem. The black-billed American swan is the great trumpeting bird. Those who have ever heard the American male black-billed swan trumpet in the evening when startled or excited, can well appreciate the words of the poet, before quoted:

But hark! What sound out of the dewy deep!  
How like a far-off bugle's shrillest note  
It sinks into the listening wilderness!  
A swan! I know him by the trumpet-tone  
Winging his airy way in the cool heavens,  
Piping his midnight melody he comes.  
Celestial bird! At this mysterious hour  
Why on the wing with chant so wild and shrill?

And why may we say that the swan represents Liberty?

Most of my best thoughts have come while in church, and meditating as I was almost constantly in leisure hours, or those not occupied in duty. In the little Episcopal Church at Meadville, in 1875, my eyes lit upon the dove in the stained glass window, then the thought flashed, Columba, dove—Christopher Columba—Christ-bearer dove—then looking up above there was a swan above the altar. My eye was constantly referring to the swan, and then I said, surely the Church must be symbolized by a swan; but when I asked some one who ought to know, he said, it is not a swan but a pelican, for the pelican sheds its blood for its young. Whatever, thought I, might have been the design, there is a swan—and again, in Trinity Church, Cleveland, there was the *swan*, perfect; and being with a friend there once, he said, "Did you see the swan above the altar?" "I did," said I, "and wanted to ask you if you did not agree that it is a swan and not a pelican."

Some time after that I came across that marvelous work "Luther's Table Talk," and there under the word "Swan" were Luther's words:

"I don't know a more exact image of the Church. The Church rests upon strong feet, so that the power of hell may not overthrow her. She is surrounded by lakes and marshes, that is, she aspires not to earthly dominion. She attacks not tyrants, but she repels their assaults by means of her two powerful wings—the ministry of the Word—and fervent prayer. Finally the swan sings at the approach of death; so the Church,

when one of her members comes to his last moment, sings to him the glad notes of the Son of God."

What represents the Church but *Liber*, Freedom, *Liber the Book*; *Liber the Tree of Life*.

Beware, then, you who attempt to pull down the Temple of LIBERTY and tear from it the Free Book planted in our schools, for God will surely smite you with a curse if you remove this candlestick out of its place.

Seven years was the work of Luther until the grand act of his life, on the 31st of October, 1517,—that is, from the time he went from the shore of the Mediterranean to Rome, 1510—seven years.

But not only have we the dove and the swan, but the eagle in these churches. Here we have these three birds, and these alone in the church and above the altar. Why? These are the demi-urgic birds which brooded upon the water of chaos, symbols of the Godhead. And the third of these, MAGI, he who has the eagle for his emblem—this name signifies *high*, *keen*, *lofty*.

"She (who? FREEDOM) called her eagle bearer down,  
And gave unto his mighty hand  
The symbol of her chosen land."

THE EAGLE.—"*Percival*."

"Bird of the broad and sweeping wing,  
Thy home is high in heaven,  
Where the wide storms their banners fling,  
And the tempest-clouds are driven.  
Thy throne is on the mountain top;  
Thy fields, the boundless air;  
And hoary peaks, that proudly prop  
The skies, thy dwellings are.

"Thou art perched aloft on the beetling crag,  
And the waves are white below;  
And on with a haste that cannot lag,  
They rush in an endless flow.  
Again thou hast plumed thy wing for flight,  
To lands beyond the sea,  
And away, like a *spirit wreathed in light*,  
Thou hurriest wild and free.

Lord of the boundless realm of air,  
In thy imperial name  
The hearts of the bold and ardent dare  
The dangerous path of fame.

Beneath the shade of thy golden wings,  
The Roman legions bore,  
From the river of Egypt's cloudy springs,  
Their pride to the polar shore.\*

For thee they fought, for thee they fell,  
And their oath on thee was laid ;  
To thee the clarions raised their swell,  
And the dying warrior prayed.  
Thou wert through an age of death and fears,  
The image of pride and power,  
Till the gathered rage of a thousand years  
Burst forth in one awful hour.†

And then a deluge of wrath it came,  
And the nations shook with dread ;  
And it swept the earth, till its fields were flame,  
And filled with the mighty dead.  
Kings were rolled in the wasteful flood  
With the low and crouching slave ;  
And together lay in a shroud of blood,  
The coward and the brave.

And where was then thy fearless flight ?  
O'er the dark and mysterious sea—  
To the land that caught the setting light,  
The *Cradle of Liberty*.  
There on thy silent and lonely shore  
For ages I watched alone,  
And the world, in its darkness, asked no more  
Where the glorious bird had flown.

But then came a bold and hardy few,  
And they breasted the unknown wave ;  
I saw from far the wandering crew,  
And I knew they were high and brave.  
I wheeled around the welcome bark,  
As it sought the desolate shore,  
And up to heaven, like a joyous lark,  
My quivering pinions bore.

And now that bold and hardy few  
Are a nation wide and strong ;  
And danger and doubt I have led them through,  
And they worship me in song.  
And o'er their bright and glancing arms,  
On field and lake and sea,  
With an eye that fires, and a spell that charms,  
I guide them to victory !"

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\* The Roman standard was the image of an eagle. The soldiers swore by it, and the loss was considered a disgrace.

† Alluding to the destruction of Rome by the northern barbarians.

It is said that the flag was fashioned from the colors of his coat-of-arms upon his signet-ring. Certainly is it true that the colors he bore gave rise to the Star Spangled Banner, and by their mysterious link in the chain prove him to be he who should come "MICHAEL" to defend the *woman*, the Church representing freedom symbolized by the *swan*, for the same colors are seen in the figure above his head in the Apocalyptic Vision.

Seven years was his work from the time he knelt in the first Congress in prayer to God, September 7, 1774, until September, 1781, when he knelt in that Gethsemane of the revolution at Yorktown. He stands as the conqueror of the dragon, the true personality of Him who was to come—written in the heavens, spoken of by the Prophets—and here in the vision represented. He stands with Columbus and Luther as the coadjutors and predecessors in the grand consummation, as a duplicate of the transfiguration on the Mount.

These are the living lights  
That from your bold, green heights  
Shall shine afar,  
Till they who name the name  
Of Freedom, toward the flame  
Come, as the Magi came,  
Toward Bethlehem's star.

In the heavens, LIBERTY, clothed with her garments of red, white and blue—the doors of the New World opened henceforth for the oppressed of all lands—and crying:

"LIFT UP YOUR HEADS, OH, YE GATES, AND BE YE LIFTED UP  
YE EVERLASTING DOORS, AND THE KING OF GLORY SHALL COME  
IN."

For now is set up that kingdom which Jesus the Christ came to establish upon the earth.

One day I received a letter from Jesse Jones, a Congregational minister, of New England, one of the greatest, though unrecognized, thinkers of the day, through Mr. Bisbee, our secretary, which said, that remarkable picture of "The Unveiling of Isis" is before me. If Mr. Latimer would like to know how closely we have thought together, I will send him a copy of my

book, "The Kingdom of Heaven,"\* and let him get Charles Sumner's '*Prophetic Voices Concerning America*.'—I procured the books and found the contents of page 215, of Jesse Jones' book, written in 1871, as follows, these words covering the whole page, in order to emphasize as completely as possible this thought:

"THE UNITED STATES OF AMERICA IS THE KINGDOM OF HEAVEN, WHICH JESUS CHRIST CAME TO ESTABLISH UPON THE EARTH."

He says: "The History of the world from this time forth is to be the history of the Americanization (*I would say Anglo-Saxonizing*) of all its peoples, which is the same as to say the Christianizing of mankind. This does not mean the absorption of all other nations into the American nation, for such will not be the case. It means that each nation retaining its own autonomy will adopt the American ideas and system of government, and every nation on the globe will be Republican. Then cometh the culmination, then will be formed the supreme and sublime coalition, the union of all nations under one administration—THE UNITED STATES OF THE WORLD, and its capital will be Jerusalem. Then will Jesus Christ come again, ascend his throne on Mount Zion, and sway the sceptre of universal dominion over a united race of loyal subjects. \* \* \* We have found that every considerable characteristic of that kingdom is either actually or germinally present in the United States of America. We have found that all the great organic ideas of the Kingdom, those fundamental principles which determine the form of structure, bear the same relation to that nation. We have found also, that many of those details and results which the Bible gives as characteristic of the Kingdom are equally characteristic of it. Furthermore, the whole direction of its movement is evidently in a right line towards the complete realization of all that was ever foretold concerning the Kingdom.

This series of facts is wonderful, is startling, indeed, in its suggestive significance. Finally, it appears that there is no

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\* NOTE. 'The Kingdom of Heaven, What it is, Where it is, and the Duty of American Christians concerning it.' (For sale by Noyes, Holmes & Co., 117 Washington Street, and 9 Cornhill, Boston, Massachusetts.)



similar nation on the globe, nor has been since the Christian Era, except in so far as some feeble copies of this have been attempted. In short, the Kingdom of Heaven has been the real idea of the United States of America from the beginning until this day, however unconscious its own citizens or the rest of mankind may have been of the fact. Its governmental structure has been, and is, so far as it has gone, the incarnation of that ideal. Its history has been the history of a steady advance towards perfectness of realization by incorporating one after another, the fundamental law, and the constitution, into its conduct of affairs. \* \* \*

The trials which were foretold of the kingdom by the Prophets and by Jesus Christ are the supreme facts which it presents, and which have shaped the forms of its organism and determined the evolution of its history. Evil has been mingled with its good throughout, as was inevitable in the midst of such a race as mankind; but the good has faced the evil repeatedly, and has finally conquered. Our late war and its results are the culmination of all our past, and the prophecy of all our future. Other struggles are to come, but the end will always be the same. With steady flow and irresistible sweep our nation is to move forward on its present line of progress, thrusting out from itself one evil after another, and incorporating into its organic law one principle of the Kingdom after another, until, at last, it becomes the complete, harmonious, symmetrical, perfect embodiment of them all.

The facts that I have thus epitomized have never belonged to any other nation of men, and they seem to all converge to a conclusion fitted to thrill the heart, overwhelm the imagination, and conquer, with irresistible conviction, the intellect of every Christian citizen. In the utterance of this sublime fact all my labor culminates, and I hasten to its accomplishment.

CHARLES LATIMER.

## THE METRIC SYSTEM.\*

MR. EDITOR:—A pouring rain that prevents sight-seeing, and almost hides the towers of Wartburg Castle on the hill opposite gives me a chance to say a few words about an article recently published, which says that the Librarian of the Paris Geographical Society has prepared a table showing what countries have adopted the French metric system and have made its use obligatory. The total population of these countries is given, and it professes to show that the people who use this system are vastly more numerous than those who do not, and among the minority are mentioned Great Britain and the United States. Thus those using the system aggregate, say, 241,972,011, as against 97,639,825 not using it.

I notice among those countries where this system is said to be in compulsory use, Norway, Sweden and Denmark. Now, I have just visited these three kingdoms, and while there I made it my business, as I have done in other countries, to make a full inquiry into the practical operation of the French metric system. I find that the Governments of the three countries above mentioned have adopted the system; and have appointed a date a few years in the future when its use will be obligatory, but as yet it is not in general use except among the employés of the Government or in Government depots. The people at large know little or nothing about the subject, and small progress has been made towards preparing them for the change. In the railroad stations may be seen charts hanging on the walls that give the system in a graphical way, and the weight of the luggage upon which an extra charge is made is computed in kilos, not in pounds; while everything weighed in the shops or markets is reckoned in pounds or measured by a "yard-stick," which is twenty-five of our inches in length; this I give from actual measurement—although the shopkeepers say that the Swedish measure for cloth is two-thirds of the English yard.

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\* From the Philadelphia *Ledger*.

In Denmark so little is known about the enforced adoption of the French system that an important shopkeeper told me that it was never to be adopted.

What I wish to make clear to the readers of the *Ledger* is that the mere fact that the inhabitants of the countries using the metric system are more numerous than those of the countries which do not use it does not furnish so strong an argument in favor of the enforced adoption of this system as would at first appear. The interests involved and the industries which would be affected by the change must be considered. The uprooting of any established system of weights and measures is a matter of very serious import, aside from any question of the relative merits or demerits of the adopted or abandoned systems, and this is especially true of manufacturing countries where vast and varied processes depend upon established standards. It is not an exaggeration to assert that the confusion and loss caused by a change in the system of measurement in Russia, with her millions of peasantry, would be less than that sustained in the city of Philadelphia alone from a like cause. England and America combined control the majority of the commerce of the world. England and America combined lead the engineering output of the world.

To the merchant who buys and sells, it makes no matter if the yard is one of 25, or 36 or 39.39 inches long, nor if the pound weighs more or less than a pint of water; but to the engineer the matter is of more vital importance.

I have gone this summer through the workshops of almost all the great countries on this side of the water and in those of Germany. I have seen the practical use of the system that I have for so long a time condemned. I frequently asked engineers if they like the system and if they use it, and I will give the answer of one in Berlin: "We use it because we have to, and it is better to have some uniform system than the many measurements that formerly prevailed in the German States. The unit of the machine shop is the millimetre in everything except bolts, nuts and screws. All bolts and nuts are made to the English inch, because we use the Whitworth system. We

do not like the metric system because it has too small a unit and the metre is too large and involves the use of decimals."

In Philadelphia the firm of William Sellers & Co. adopted the French metric system in an important part of their works as long ago as thirty years, and have continued its use since, until their workmen are as familiar with it as with the inch. With all this long practice during my connection with the firm, I have written and spoken against the enforced adoption of the system, not only because of the expense involved in changing, but because it is not a practical system; it permits of no elastic gradation of shop or trade sizes. The millimetre is taken as the standard to avoid the complication of the constant use of decimals, as nearly all measurements in machine work are less than one metre. This small measure involves many figures, and does not permit any good memorizable series. The inch cut up into the natural division by constantly halving permits the use of sizes best suited to the needs of the workmen.

The standard of the French system is a certain bar, kept for comparison; so is the English yard, from which we get our feet and inches. The high-flown notion that the metre is a measurable portion of the quadrant of the earth's circumference has been given up long ago, and the measurements of England and America are on a better basis of accuracy to-day than that of any other country. The French system theoretically predicates its weights on the weight of a cubic decimeter of distilled water at a temperature of 39.1 deg. Fahr., the weight of which is called the kilogramme, and is two and two-tenths of our pounds; but really the standard unit of weight is the platinum kilogramme-weight deposited in Paris.

In Germany you never hear of the kilo, but they sell by the pound, their pound being the half of one kilo; this they cut up as they please into smaller weights, and you can buy a pound of grapes or butter just as well as you can in America. It is claimed that given the metre, all weights, etc., can be deduced from it; in theory this is very well. The most skilled workmen, however, are not yet able to make two litres of water weigh alike to the utmost point of accuracy, and the cubical litre is not used, but is converted into a circular or cylindrical

vessel, with all the trouble of the problem of squaring the circle.

If a bar of ordinary forged iron be planed up to measure one inch square, and the bar be one English yard long, it will weigh ten pounds, and the tenth of such a bar will weigh one pound more accurately than will the ordinary litre of water weigh one kilo. The English engineer in these days of iron knows when he uses shapes of iron rolled of uniform section that the tenth of their weight in pounds per yard give him the area of the section, and this admirable incident will long fix the desirability of the present unit of England and America.

When we consider the interest involved it will be seen that the population now making practical use of the English standard is greatly in excess of that using, by force, the French system. Millions of those numbered among the people who use the French system have no occasion to use any or know any system whatever, save in the crudest form.

Swedish iron and steel are rolled to English inches in size; so, also, their boards are cut to the English inch, because their market is largely in those countries that use the inch. In the Russian machine shops the English inch is used exclusively, and, as I have said, throughout all Germany it holds for all screw sizes. In France and Belgium the yardstick is the metre hung from the rod, like the crossbracket of a drop gas light, placed about eighteen inches above the counter. In Germany the half metre, or twenty inches, about, is the measure used, and that held in the hand of a salesman by a handle at one end of the measuring stick. The Swedish machinist carries in his pocket a rule on which he has the English inch, and by its side the French measures; on the other side he has the two Swedish feet; one long in use and one ordered to be used but never put into practice. The Swedish roads are laid out now in kilometres, and marked by iron plates, giving at each ten kilometres the distance from some place, while half-way between is a sign 5 kl. This division of the roadway seems to them to be fine enough, as the old Swedish mile was six and two-thirds of our mile, and five kilometres is a less distance.

Carefully as I have considered this subject of weights and measures during the time I have been from home, I am the

more confirmed in my opposition to the enforced adoption of the metric system of France in my own country, and firmly believe that those countries that have adopted it are at a disadvantage as compared to even the most imperfect of our systems. America has entered on the line of simplification of its metrology, and that is the direction that should be followed, not by any means giving up what is good, but by making what has been found to be practical better and simpler.

One has not to be long in England to find out how firmly are the seemingly complicated systems of weights and measures of that country fixed with the people. They weigh by the stone and compute by the sterling currency as rapidly or more so than we do with our dollars and cents, and that because their unit is larger. The English shopkeeper knows nothing about decimals, and says, if you ask him, that he has never learned what they are.

England has lately made legal the admirable standard manufactured by Sir Joseph Whitworth, and the chance of her adopting the metric system is not in the most remote degree possible.

Very truly,

COLEMAN SELLERS.

Eisenach, August 24, 1884.

## CHARLES CASEY'S SOLUTION OF THE MEANING OF THE "UNINTERPRETED SIGN:"

\*A QUOTATION FROM AN ARTICLE BY COCKBURN MUIR.

"The crown and climax, however, of the evidence was the verification in the measures of an entirely unsuspected order of ideas, unrelated to any geometric or mathematical expression whatever. In the course of his explorations in 1865 (note that the *dates* are of vital consequence throughout the whole evidence) Piazzzi Smyth was surprised to find in the entrance-adit that, while all the rest of the joints of the masonry were vertical to the direction of the adit, there are two on each side, a short distance from the entrance, which are vertical to the horizon. As they seemed to be intended as pointers to indicate some special feature, he made careful search, and discovered near the second joint on each side a remarkably fine and straight line; both evidently incised with finest care and precision. In 1867, in his book 'Life and Work at the Great Pyramid,' he described these lines, but could so little divine their intent that he called them the *uninterpreted sign*. But the strangest incident of the matter was that, while he measured every joint and stone of the interior that he could lay hands on, these two special and remarkable lines he passed over without measuring their position, content to note only their existence. We shall see presently that, as elsewhere throughout, his hand had been guided, so here it was stayed by Him whose Witness this is; that the evidence should be set above the breath of suspicion, and that it should be ultimately completed seven years later by totally independent and unconscious instruments.

"In the meantime a young naval architect, Robert Menzies, who has built one of the fastest craft that ever bent canvas to a slant of wind, and who, amidst his professional duties, has his mind occupied with high thoughts, was impressed with the con-

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\* In 'Life From The Dead,' Vol. iv., No. 45.

viction that the lengths of the adits and gallery express *chronological* epochs; that the ascending-adit indicates the true interval from the exodus to the advent of Messias; and the gallery the duration of the present dispensation, specially indicated—first, by the sudden change from the low adit, of  $52\frac{3}{4}$  inches vertical height, in which one must stoop, to the lofty 340 inches of the gallery; then by the 33 inches from the beginning of the gallery to the mouth of the well, corresponding with the years of our Lord's life on earth; and again by the 36 'overlapings' along the roof, corresponding with the months of His public teaching.

"In 'Egypt's Record of Time,' published in 1869, three years before the solution of the 'uninterpreted sign,' the Rev. W. B. Galloway established two things, (1) that our present reckoning of time, as from the incarnation of our Lord, is accurate within three months; and, (2) that the interval from the exodus to that event was 1540 years. My venerable friend, who rejects the witness of the Pyramid, could not foresee that he was thus furnishing independent evidence of its truth.

"The discovery that the sum of the diagonals of the base expresses the period of the precession, had already shown that inches of length were used by the designer to indicate years of time; just as in the base-side cubits are used for days. The measures gave for the length along floor of ascending-adit, from floor of entrance-adit to beginning of gallery, 1542.46 Pyramid inches, thus agreeing within small margin with the period deduced by an entirely isolated, careful and masterly investigation of the data of history and the records of Egypt itself.

"The engineers have always been to the fore in this business. It is all in their line. But I beg you of your condescension to understand that, from their training, habits, and the nature of their duties, and very grave responsibilities, they are an incredulous and hypercritical set of mortals. Having to deal day by day with hardest of hard facts and driest of figures, the thing they hate most is a 'theory.' Their only touchstone is—'*practical*.' That engineer is a lost man who gets bitten of a 'theory.' In this question of the Pyramid they begin generally (again and again I have known it so) by treating it contemptuously. Then



out of pure contradiction they look into the measures to find the means of demolishing the conclusions. Eventually they are conquered by the power of the evidence, and submit—like all well-disciplined minds.

“Another, then, formerly of this confraternity, but now—*poeta nascitur*—our excellent friend Charles Casey, with a softened heart of the arid and thirsty sort, but with a very hard head slow to be convinced, was not disposed to accept the conclusion of divine inspiration in the Pyramid without such evidence as should not be capable of misinterpretation. There were many more, myself included, who felt that a conclusion of that immense gravity was not to be lightly approached. He argued very discreetly that if the ascending-adit was truly *intended* to indicate prophetically the time from the exodus to the advent, and the gallery the dispensation of the New Testament, it was hardly conceivable that there should not also be some special *numerical* indication of the interval which was to elapse, from the date of the structure to the greatest of all events in human history, the coming of Christ. Following up, therefore, the extraordinary corroboration of Menzies' identification, and as the date had been astronomically determined as 2170 B. C., he enquired if there were any special feature at that number of inches back from beginning of gallery. Piazzzi Smyth had never until then observed that the abnormal joints and the adjacent fine-ruled lines already described were at *about* that distance; nor, to quote his published words, ‘ever thought of them before in connection with *possible indications of date*, or indeed of anything else by virtue of their precise and absolute *place*.’ But the persistent postulant wanted to know their precise and absolute place. The Professor could not tell. *He had not measured it*. It became urgent, then, to write to Cairo, to another engineer, Mr. W. Dixon, who happened to be on duty in those parts, to ask him to supply the necessary measure. Although ignorant of the purpose, but specially desired to use the utmost precision, he took with him to attest and check his work Dr. Grant, of Cairo. It is necessary to observe very particularly that, as the distances of all the joints had been carefully noted, and published also to the world, by Piazzzi Smyth,

all that was asked from Cairo was the distance of the lines from the adjacent joints. When the measures were received, it was necessary only to deduct them from the distances of the nearest joints previously determined. The result was that the precise distances of the incised lines from the beginning of the gallery proved to be in Pyramid inches:

On the East Side,	2170.5
On the West Side,	2170.4

the difference between the two sides being thus only one-tenth of an inch. This occurred in 1872. Thus after seven years the 'uninterpreted sign' was interpreted, its mathematical value attested by unconscious instruments, the intervention of the divine hand made plain by incontrovertible evidence, the element of prophetic chronology in the Pyramid established, the prime reason for its existence explained, and the words of the holy prophet verified:—*In that day shall there be an altar to the Lord in the midst of the land of Egypt, and a monument at the border thereof to the Lord. And it shall be for a Sign and for a Witness unto the Lord of hosts in the land of Egypt.*"

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AN EXTRACT FROM A LETTER OF CHARLES CASEY.

"In 1872," writes Mr. Casey, "I had been working for some four or five weeks on measures of the Pyramid, in search of an indication of the astronomically fixed date of erection, viz.: 2170. My search measures had been applied to the outside of the Pyramid; so, on writing to Piazz Smyth on the fruitlessness of my work, he replied that he thought the test search should be applied to the interior, and not to the exterior, as regarded chronometrical data. Taking the thought into cogitation, and shutting out geodesic, astronomical and cosmical considerations as being interesting rather than vital as to the divine inspiration of the architect, there came into my mind one night (when reflection seethed in my thought) suddenly, as the opening of a door letting a flood of light into a dark chamber, a conclusive conviction, which, being put into words, said: 'If Muir's thesis is true, and the chronological metrology of the Pyramid retrospectively and prospectively inspired, there is *one date* in the time record of earth, viz.: the birth of

Christ, which *must appear* in the Pyramid measure, else its character, as a monument whose architect acted under divine inspiration in its construction, has no confirmation in demonstrable fact.' Under this paramount conviction I wrote Piazzzi Smyth, on the next day, the sum of my conclusion. To that letter I had no reply in ordinary mail course, and the matter lay dormant in my mind until some time after I received a letter from my good, zealous and patient friend, the Astronomer Royal, stating that, on receiving my letter, he had forwarded its thesis to Waynman Dixon, then in Egypt, who had gone critically over the passage measures and found, at 2170 inches from north end of grand gallery, the mysterious line which Piazzzi Smyth had noticed and described in 'Life and Work' (1867).

"The astounding result completely unnerved me; the thought that here now in this, our generation, had been given an irrefragable testimony above and beyond the reach of verbal quibble or contest, to the truth of the Holy Scriptures and the divine nature of Jesus Christ; a testimony resting not on the sandy foundation of words, but on the rock-basis of infallible mathematics—the only science to which all rational minds, in every age and nation, are compelled to submit—giving, as before stated, its irrefragable demonstration of the absolute truth of the word of God in its testimony respecting His incarnate mercy in the person of 'Jesus the Prophet of Nazareth; of Gallilee.'"

STANZAS FROM "PHILITIS," OR THE SOLUTION OF THE MYSTERY WHICH FOR FOUR THOUSAND YEARS HAS SHROUDED THE GREAT PYRAMID IN EGYPT.

BY CHARLES CASEY.

Siriad ! the land of mysteries sublime !  
 How Sihor's valley and its banks abound  
 With proofs that reach back to the youth of time,  
 Of art, skill, science, wisdom, high, profound,  
 Unmatched in any age, or race or clime.  
 Its temples, tombs and pyramids astound—  
 From Thebaid's solemn grandeur to the site  
 Where Jeezeh's structures guard historic night.  
 \* \* \* \* \*  
 How in its presence modern pride is bowed !  
 Its hoary wisdom whispering from the dead—  
 Sublime, mysterious, awful—with the shroud  
 Of forty centuries wrapped around its head,

We catch its muffled tones, now low, now loud,  
And hear, with wonder nigh akin to dread,  
The cosmic truths now by its stones revealed,  
Which for four thousand years have lain concealed.

By its vast hugeness mind and eye are dazed  
And into silence awed. We stare and stand,  
Striving in vain to grasp *how* it was raised—  
To comprehend the skill by which 'twas planned.  
Pigmies in mind and stature, stunned, amazed,  
We gaze and feel before that structure grand—  
The mightiest altar that has ever been,  
Which cannot be imagined until seen.

\* \* \* \* \*

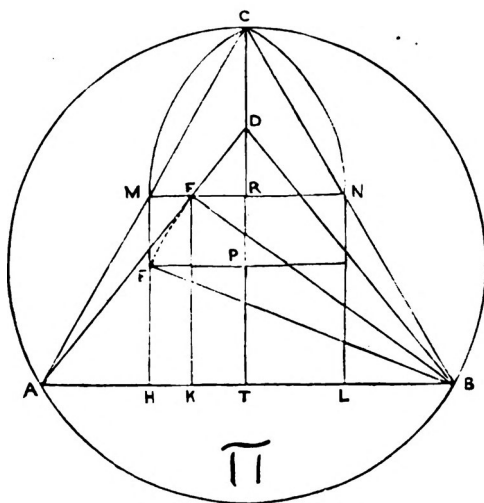
But as that hoary pile doth still devour  
Its shadow daily, so it seems to hide  
Its secret truths. Four thousand years its power  
Appeared, with magic mystery allied,  
Until at length came the appointed hour  
When scientific search, so long defied,  
Expelled the Genii of the powers of night,  
And gave its prisoned secrets to the light.

Honor to Smyth! and all that noble band  
Of scientific men, who gave their mind  
To rescue from the desert's drifting sand  
The greatest truth to modern times assigned—  
A revelation grandest 'mid the grand  
Of all that science gave to human kind;  
An honor to their nation, age and race,  
Who have achieved what time can ne'er efface.

## PI.

The value of  $\pi$  is found to within  $\frac{1}{1000000}$  by the following geometrical construction. It gives the height of the Pyramid 5818.46, or one-sixth of an inch less than  $\pi$  gives, the geometrical base being 9139.871.

Construct the equilateral triangle ABC circumscribing the square HLMN. Through the centre of the triangle draw EP parallel to HL. With EB as a radius, describe the arc EF intersecting MN in F. Through F draw AD; then  $\frac{AT}{DT} = \frac{AK}{FK} = .7854$ , which is the number commonly used for  $\frac{\pi}{4}$ .



Let  $RN = 1$ ; then  $CR = \sqrt{3}$ ,  $CT = 2 + \sqrt{3}$ ,  $BT = \frac{2 + \sqrt{3}}{\sqrt{3}}$ ,  
 $PT = \frac{1}{2}(2 + \sqrt{3}) = EH$ ,  $EH^2 + HB^2 = EB^2 = FB^2$ ,  
 $KB^2 = FB^2 - FK^2$  and  $AK = 2 BT - KB$ ; hence  $\frac{AK}{FK} = .7854$ .

H. G. Wood.

## PREFACE TO LIEUTENANT TOTTEN'S BOOK, 'AN IMPORTANT QUESTION.'

The race to which these pages are dedicated is by blood, by letter and by the spirit, literally "called in Isaac's name." As Saxons, they are the lineal descendants of the "Saka-i-Sunnia," or "Sons of Isaac;" while, by the particular branch through which they derive their lofty genealogy, they are the posterity of Joseph, "the beloved son," to whom pertained their birthright.

The Egyptian extraction of his two sons, Ephraim and Manasseh, bequeaths to them, together with all the blessings "of him who was separated from his brethren," an inheritance none the less royal and significant in the mysterious land of their mother; Asenath, the daughter of Potiphera, prince of On." Though, like another and greater son of Jacob, it is true that they were, in early days, "called out of Egypt," it is none the less true that the summons was simply given to them for the purpose of extending the possibilities of their ultimate dominion.

In these latter days, when the ends of the earth seem literally to draw nigher to us, when every nation is so deeply impressed with the uncertainties surrounding the long contested solution of "the eastern question," when an intense and ever increasing expectancy has settled down upon the whole human race, it may well be asked if it is not a little remarkable to see the flags of these two *brother* nations united for the first time since their independence, in the streets of Alexandria? In 1882 the bronzed tars of England and America, of "brothers John and Jonathan"—the only nations called "brethren" upon the face of the earth—landed together on the shores of the delta of that ancient stream, upon whose banks their fathers, also brothers, had lived as princes twice eighteen centuries before. Shall we endeavor to convince ourselves that in this act there was no overruling exercise of that will which weaves the thread of destiny? Or shall we cease to doubt, and yield to the conviction that there is indeed a power that giveth the dominion unto whom it will?

In the same year, 1882, both England and America struck off commemorative medals, upon whose reverse faces the two most mysterious emblems of Egypt, the Sphinx and Pyramid, were severally displayed as central devices. In their inception these medals had not the remotest connection. The one was the Egyptian war medal of Great Britain; the other was the centennial seal medal of the United States. Nevertheless, a strenuous effort was made to induce the Queen to adopt the Pyramid as a central emblem for the British war medal. It had already been used by America that very year; and it was not likely that an occasion for its simultaneous employment by the two nations would soon, if ever again, occur. But Ephraim is not Manasseh, and so the idea of the Sphinx was adhered to by our fraternal nation as for it the most appropriate. Was Providence, which counts the hairs upon a human head, also an unconcerned spectator then? And were these matters really trivial things, and after all of no historic moment?

"There's a divinity that shapes our ends,  
Rough hew them how we will."

And it was no accident that the greatest commercial city of each of these two brothers and Egyptian nations was at this time graced with one of the two obelisks that, when their father Joseph married the Princess Asenath, had stood, like Jachin and Boaz, in strength and beauty on each side the portal of her father's temple.

Who, indeed, shall say that, in youthful sports around the entrance to that noble shrine,

their fathers did not choose, as children do to-day, and even name as "Ephraim" and "Manasseh" each one, the self-same pillar, which, in centuries then to come, the powers that overrule have now brought by such natural means to the more modern homes of their descendants, and have stationed at the very gates of all their greatness?

There is undoubtedly an inheritance in the land of Egypt for the Anglo-Saxon race, and the day has dawned when it shall be given unto those whose right it is.

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In our treatment of this subject, we shall first examine into facts which lie near home, and see in how much or in how little the Anglo-Saxon race is actually in possession of the blessings promised unto Ephraim and Manasseh as the sons of Joseph. We shall then ask our readers to accompany us through some studies of this remarkable monument, and by the way, shall gather not a little from the God-designed metrology of Israel, of highly scientific import.

The hierarchy of science so-called has long since agreed to disregard as totally unreliable every structure a single stone of whose foundation has been quarried from the eternal word of God. Any appeal to the Scriptures, no matter how modest, is so thoroughly at variance with the modern methods of philosophers that the book of an author who has searched the Scriptures for guidance towards the eternal truth of things, is condemned unread, stamped with the seal of disapproval unopened, and burned relentlessly without a hearing, lest the people, having read it, should pronounce it true and learn to disregard their would-be teachers.

But it is not to be expected that a book so full of stumbling blocks, offensive to their theories of evolution, as is the Bible, should find any favor or receive the least toleration at the hands of modern scholars. From the dust they love to feel that all around has risen, and without a God; and into the silt of a disintegrated, dead and formless universe, they trust at length their worn-out essences will sink into eternal sleep. Modern science, disguise it as we may, is thus at heart not merely far at sea upon the waves of doubt, but is essentially an atheistic school that has no God, and which has long since closed its doors against the written Word.

From this school, therefore, the present volume does not expect a single meed of praise, but here I am content. Were it to be otherwise—were recognition granted to the thoughts advanced by our self-styled scientific teachers—I should feel that the light in which these pages had been written was but an *ignus fatuus* from the swamp of things that soon must pass away. I write, however, for the people whose concern alone this matter is, and who still read the word with simple trust; and though my subject is of the highest scientific nature, I doubt not they will find it clear, as truth is ever to be found, and not so intricate but that it will be filled with what to every mind is deeply interesting, and also find it to be well within the scope of even moderate education and capacity.

As a matter of fact the Bible deals at great length with this very subject of metrology. Around it the whole of the Hebrew polity harmoniously arranges itself, and very naturally, too; for a just and perfect life was all it aimed at inculcating; and the very measure of fair dealing, of justice and truth, is centered in and squared and righted at an honest and an accurate standard, too sacred to be ever lengthened or diminished by any possibility of double dealing.

As the study of metrology inevitably leads us to the study of the Great Pyramid of Egypt, so, too, it leads all dwellers in the land of Manasseh to look with greater interest on the arms and crest and seal chosen for the nation's blazonry by ancestors who wrought more wisely than they knew. The United States of America has been a nation marked out by special manifestations of Divine Providence from their very beginning until now.

In was in their earliest struggles that they looked towards this western wilderness; and behold the glory of the Lord appeared in the cloud, and led them to their favored habitation. By faith, like Abraham their ancestor, when called upon to go out into a place

which they should afterwards receive for an inheritance, they obeyed and went out, not knowing whither they went, and dwelt in their land of promise as in a strange country. But the clouds of the Almighty were about their habitation, so that the sun smote them not by day, neither the moon by night. It is, therefore, in their crest they fittingly commemorate how by faith there sprang from even one, and him as good as dead, so many as the stars of the sky in multitude. It is, therefore, in their motto they repeat this reference, and intensify the idea of union by that beautiful allusion to the universal brotherhood of all mankind, who in Christ, as St. Paul truly says, are "many in one."

This was indeed the nation that fled into the wilderness borne upon eagle's wings—the goddess of liberty, clothed with the sun, bathed in the cloud-reflected colors of her flag, and crowned with the stars that marked the union of her States and pointed out their lofty origin. And her eagle guardian was the Lord of Hosts himself; for as an eagle stireth up her nest, fluttereth over her young, spreadeth abroad her wings, taketh them, beareth them on her wings, so the Lord alone did lead his people towards the land of freedom, and there was no strange god with him.

Truly, then, may all the nations of the earth exclaim, "Who is like unto thee, O people saved by the Lord, who is the shield of thy help? Thine enemies shall be subdued unto thee, and thou shalt tread upon their high places. In peace thou shalt be like unto thy father Joseph, a branch planted by the river of water that bringeth forth his fruit in his season; thy leaves also shall not wither, and behold whatsoever thou doest it shall prosper."

Then may Jeshurun, the wise people, fittingly reply, "There is indeed none like unto the God of Manasseh, who rideth upon the heavens in my help, and in His excellency on the sky, the eternal God is my refuge, and underneath are the everlasting arms."

Upon the reverse of our national seal the references to our birthright as descendants of Joseph and Manasseh, and thus of Egyptian origin, are even still more pointed. The leading motto—"Annuit Cœptis" ("He has prospered our beginnings")—is a direct use of an expression so often reiterated in the Bible story of Joseph, that he has become the very type of a prosperous man."

In the capstone we have again not only the emblem of that Divine Providence which crowned our efforts as a struggling people, but of the Saviour of his people, in whom alone our building, fitly joined together, groweth upwards into that perfect union of the human and divine. The building—a pyramid unfinished—an emblem of stability, of perfect measure, just weight, and of eternal truth, and harmony with nature, man and God, is eminently the Egyptian emblem of Manasseh. The date upon its base is his year of maturity—MDCCLXXVI., and marks the dawn of another golden age, as the motto below expressly indicates:

*"Novus ordo seclorum."*

This motto is an intentionally altered quotation from Virgil's Fourth Eclogue, and was borrowed in turn by Virgil from the mystic Sybilline Records. The text opens as follows: (Translation):

"The last age of Cumean song now comes;  
*Novus ordo seclorum*—a mighty order of ages is born anew.  
 Both the prophetic virgin and Saturnian kingdoms now return;  
 Now a new progeny is let down from the lofty heavens;  
 Favor, chaste Lucina, the boy soon to be born,  
 In whom the iron age shall come to end,  
 And the golden one arise again in the whole earth."

Words would be exhausted in any attempt to do justice to the thoughts that find birth in the contemplation of the American era. Unique with the rest of the symbolism upon the long concealed face of our great seal, this motto comprehends in itself the whole of the



Virgillic Sybilline fragment just translated. It is unique in its reference to the birth and genius of American institutions—institutions that cannot pass away, and whose full development no hand can stay from reaching the goal of their most perfect realization. The new order of things has been let down from heaven, not again to be withdrawn from earth; but this motto is also most beautifully in harmony with the entire reverse of the seal itself; and it conceals a hidden reference to the Great Pyramid above—the legacy of an *earlier* golden age to ours.

In this, "the last age of Cumean song," it is our task to rebuild the monument of just weights and perfect measures. In the day of liberty, now fully dawned, the recognized equality of all demands, as the foundation of society, perfect justice in the dealings of man with man; and it is only in the rediscovery of the secrets of true pyramidal construction that the new order of the ages can be founded in stability.

When, at length, therefore, we Americans—as the children of Manasseh—have fully come to read our title clear to this inheritance, so grand and so far-reaching, how pointedly will the blessing of the great ancestor who adopted us—for we were half Egyptian—and made us equal to his own, be named and numbered on us.

"He, (Manasseh," said Jacob, when he blessed our fathers),"also shall be a great people." Thus he, whose name was changed to Israel, made us greater than his own; since from all he took the birthright, and conferred it upon the two adopted sons of Joseph—upon Ephraim and upon Manasseh, upon England and America; that is, upon the Anglo-Saxon race.

## THE INTERNATIONAL CONGRESS TO DETERMINE A PRIME MERIDIAN.

OPENED AT WASHINGTON, OCTOBER 1, 1884.

AN ACT to authorize the President of the United States to call an international conference to fix on and recommend for universal adoption a common prime meridian to be used in the reckoning of longitude and in the regulation of time throughout the world.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the President of the United States be authorized and requested to extend to the governments of all nations in diplomatic relations with our own an invitation to appoint delegates to meet delegates from the United States in the city of Washington, at such time as he may see fit to designate, for the purpose of fixing upon a meridian proper to be employed as a common zero of longitude and standard of time reckoning throughout the globe; and that the President be authorized to appoint delegates, not exceeding three in number, to represent the United States in such international conference.

Approved, August 3, 1882.

The list of countries represented and their delegates, is as follows:

Austria-Hungary—Baron Ignatz von Schaeffer, E. E. and M. P.

Brazil—Dr. Luis Cruls.

Colombia—Com. S. R. Franklin, United States Navy.

Denmark—Mr. Carl Steen Andersen de Bille, Minister Resident and Consul General.

France—Mr. A. Lefavre, M. P., and Consul General, Mr. Janssen.

Germany—Baron H. von Alvensleben, E. E. and M. P., and Mr. Hinckeldeyn.

Great Britain—Capt. Sir F. G. O. Evans, Prof. J. C. Adams, Lieut. Gen. Strachey, Mr. Sandford Fleming.

Guatemala—Mr. Antonio Batres, E. E. and M. P., and Mr. Miles Roch.

Hawaii—Hon. W. D. Alexander and Hon. Luther Aholo.

Italy—Count de Foresta, Secretary of Legation.

Japan—Prof. Kikuchi.

Liberia—Mr. William Coppinger, Consul General.

Mexico—Mr. Leandro Fernandez and Mr. Angel Arguiano.

Costa Rica—J. F. Echeverria.

Netherlands—Mr. G. De Weckherlin, E. E. and M. P.

Paraguay—Mr. John Stewart, Consul General.

Russia—Mr. Charles De Struve, E. E. and M. P., and Maj. General Stebnitzki, le Conseiller d'etat Actuel Kologrivov.

San Domingo—Mr. M. De J. Galvan, E. E. and M. P.

Spain—Juan Pastorin Juan Valera, Spanish Minister, and Emilio Ruiz del Arbol.

Sweden and Norway—Count Carl Lewenhaupt, E. E. and M. P.

Switzerland—Col Emile Frey, E. E. and M. P., and Prof. Hirsch.

Turkey—Tewfik Pasha, E. E. and M. P.

Venezuela—Senor Dr. A. M. Soteldo, Charge d'Affaires.

United States—Rear Admiral C. R. P. Rogers, United States Navy, Mr. Lewis M. Rutherford, Mr. W. F. Allen, Commander W. T. Sampson, United States Navy, and Prof. Cleveland Abbe.

A delegate to the Conference writes as follows :

WASHINGTON, October 23, 1884.

*My Dear Sir :* Yours of the 29th of September duly received. The metric system was brought up by the Spanish delegates, but it was ruled out of court by the chairman, and there it ended.

I enclose a copy of the resolutions passed. We had a final vote yesterday, after twenty-two days' cogitation and delay. The business is now over, and the world will have a universal time based on principles I have long advocated.

#### RESOLUTIONS.

In case the Conference shall not adopt the resolution proposing a neutral meridian, it is intended to introduce the following, and copies are distributed with the hope of saving time :

*Resolved :* That the Conference proposes to the Governments here represented the adoption of the meridian passing through the centre of the transit instrument at the Observatory of Greenwich as the initial meridian for longitude.

*Resolved :* That from this meridian longitude shall be counted in two directions up to 180 degrees, east longitude being plus and west longitude minus.

*Resolved :* That the Conference proposes the adoption of a universal day for all purposes for which it may be found convenient, and which shall not interfere with the use of local or other standard time where desirable.

*Resolved :* That this universal day is to be a mean solar day ; is to begin for all the world at the moment of mean midnight of the meridian coinciding with the beginning of the civil day and date of that meridian, and is to be counted from zero up to twenty-four hours.

*Resolved :* That the Conference expresses the hope that as soon as may be practicable the astronomical and nautical days will be arranged everywhere to begin at midnight.

Passed the 22nd of October.

## LETTERS.

## LETTER FROM S. BESWICK.

STRATHROY, ONTARIO, September 18, 1884.

*My Dear Sir*—I had partly determined not to write any more just yet, and lie still for awhile, but I at length concluded to send you this article, as a specimen of the outcome of my studies this summer.

I hold the opinion that we shall find the line of the casing sides overlapping the line of the sockets, and that the Expedition will discover the proofs on a careful search of the rock outside the sockets. A discussion of the point will do good. You will observe my claim in the article is clear and definite, that the geometrical basis is the true base, and the only actual base the Pyramid ever had. I do not accept any other base as the builder's base than 9139.8712; the geometrical base is the only base it ever had. This is my theory, and it is the only one that will stand the test of future and present investigation. But if we accept the socket-levels of Petrie as the corners of the Pyramid base, then the case is different. The more Mr. Wood, Mr. Skinner and others investigate and compute, the more they will get puzzled and fall into inconsistencies, fancies and speculations. The simple theory of a geometrical square of 9139.8712 inches to a side, as being the actual square of the Pyramid will relieve the mind from all difficulty, and, what is better than all, we shall then have a square which our formulæ can measure infallibly to the one million millionth of decimal figures, if we choose to be so very exact in our computations. I have given up Petrie's socket levels and side lengths as an authority, and have fallen back upon the formulæ of the Institute as the only reliable ones, as they give better and closer results, besides being more consistent with the interior measurements. I find no authority will do this but our own formulæ. For, on examining the most approved measurements of Petrie—approved by himself I mean—and the best measurements of the day, I find they are nothing more nor less than simple approximations to the results given by our formulæ. And thus I stand immovably fixed in our own standards.

I again conclude with the declaration that the original base of the Pyramid—the actual base which the builders placed on the hill of Gizeh—was identically the same as the geometrical base of 9139.8712 inches to a side, and that it had no other base. It was a perfect square with equal sides, and that the heel of the corner stones was placed in the socket, whilst the foot and front part of the casing stones overlapped the sockets on all the four corners.

Respectfully,

S. BESWICK.

## LETTER FROM JOSEPH BAXENDELL.

August 7th, 1884.

*My Dear Sir* :—I have to-day received from some unknown friend in America a copy of *The Churchman*, of July 19, 1884, which contains a review of a paper entitled 'The Imaginary Metrological System of the Great Pyramid of Jeezeh,' by F. A. P. Barnard, LL.D., and it is deplorable to see in a periodical bearing the title of *The Churchman*,

such an exhibition of unchristian feeling and language as is shown in this review. No one earnestly seeking the truth and anxious to act without prejudice could write in the spirit displayed by the writer in the paper and his reviewer; nor speak of the common belief that the design and building of the Great Pyramid was of an inspired mind, as "imputing to the Supreme Ruler of the universe a project so wild, so cyclopean, so almost stupidly idiotic, as that of heaping up six and a half millions of tons of rough limestone blocks about a hollowed piece of granite which has been at the mercy of the tourist for centuries, mutilated and desecrated, in order that the English speaking races of the world might, in the nineteenth century, use a quart and a pound which have no direct relation to the length of a foot," nor could any one having a strict regard for the truth unblushingly write that "the Virgin Mary, herself resting at Matariah, and living at Heliopolis, might have learned the length of the human life of her Son by simply traversing part of the passage in the structure which confronted her Egyptian home," although, as the writer is no doubt aware, neither the Virgin Mary nor any one else knew of the existence of the passage referred to. When the advocates of a cause find themselves driven to attempt to support it by statements like these, it is evident they feel keenly the weakness of their case, and have little hope that it will meet with general acceptance.

With an utter disregard of the truth, it is stated by the reviewer that "the array of new facts which Petrie's book presents demolishes completely the pretensions of the Pyramid religion, and buries beyond all hope of resurrection the ingenious theories of Mr. John Taylor and Professor Piazza Smyth," whereas Petrie's new facts have all given additional support to these theories and established them on a basis which is not likely to be shaken by all the "sound and fury" and irreverent language of disappointed anti-pyramidists.

In my letter of July 7, I believe I stated that the result of the Belgian observations of the last transit of Venus gave a sun distance of 91,756,800 British miles. In the report I had seen the resulting parallax was stated to be 8.909", but I find that in M. Houzeau's complete report it is stated to be  $8.911'' \pm 0.084''$ , which gives the sun's distance = 91,731,600 British miles, or 105,400 miles less than the Pyramid distance which Dr. Barnard says "is only about a million of miles too short!" It remains to be seen whether he will now have the manliness to admit his error and retract his inconsiderate statement.

I remain, my dear sir,

Yours very truly,

JOSEPH BAXENDELL.

## TRANSACTIONS OF THE OHIO AUXILIARY SOCIETY OF THE INTERNATIONAL INSTITUTE.

SEPTEMBER 10, 1884.

In consequence of the storm, only four persons were present. The meeting, therefore, adjourned after a brief discussion to September 24th.

SEPTEMBER 24, 1884.

Notwithstanding the opposition of the elements, a large audience assembled in the hall of the International Institute for Preserving and Perfecting Weights and Measures.

After the election of members the first business before the meeting was the reading of a letter from the Secretary of the New York and New Jersey branches of the International Institute, requesting that the members of the Institute in Cleveland would co-operate with those branches with regard to "an open letter to the President of the United States" and "argument by committee," which were brought before the notice of the society at a previous meeting. In Mr. Latimer's remarks upon this subject he explained the necessity for bringing the aims of the Institute before our representatives in view of the International Conference which will convene at Washington on October 1st. A letter was then read from George C. Mason, Secretary of the American Institute of Architects, requesting that a delegate from the International Institute might attend the meeting of architects in Albany, October 22d, to read a short paper, or give an oral description of the work of the society. Rev. H. G. Wood, of Sharon, Pennsylvania, was accordingly appointed to represent the society at Albany.

Mr. Latimer then gave a short exposition of the work of Lawrence McCurric on "Planetary Motion." He demonstrated on the blackboard Mr. McCurric's method of obtaining the relative distance of the planets by geometry, and showed some very close and curious arithmetical coincidences and relations. Professor Stockwell in his criticism admitted the ingenuity of Mr. McCurric's method, but said that no effective practical result could be obtained by it.

Rev. H. G. Wood next showed the connection between ancient and modern measures and their geometrical proportions. He then read and illustrated a paper by F. A. R. Winter, of Demerara, British Guiana, on the "Sacred Chronology in Correlation with the Measures of the Great Pyramid." Rev. E. P. Ingersoll, of Rosevale, Kansas, was then introduced by the president, and lectured upon "The Identity of the Anglo-Saxons with the Lost Tribes of Israel."

The members elected were Charles E. Bliven, Toledo; J. R. Bryden, C. E., Demerara, British Guiana; John Forrest, M. D., Charleston, South Carolina; Mrs. Dr. Elmira G. Howard, Cincinnati; George C. Mason, Newport, Rhode Island; Jesse Opperman, C. E., Buffalo; George Engel, Cleveland.

OCTOBER 8, 1884.

In the absence of the president, Vice President A. M. Searles occupied the chair at the meeting of the International Institute for Preserving and Perfecting Weights and Measures. Mrs. D. White, Black Creek, Ohio, was elected a member. A letter was then read from George C. Mason, Secretary of the American Institute of Architects, expressing his satisfaction at the appointment of Rev. H. G. Wood as delegate from the International Institute to the convention of architects to be held in Albany, October 22d, 23d and 24th. Mr. Wood, who has just returned from Washington, wrote that at the second sitting of the International Conference there, the French repre-

sentative was not in favor of Greenwich meridian as the prime. The discussion was very warm. England and America would not consent to a change from Greenwich. It would cost the American government \$1,000,000 and the British £1,000,000 to alter the charts. Mr. Wood says: "I do not think we have anything to fear for the preservation of our weights and measures. If the International Congress do recommend the adoption of the French metre, there will be abundant and public opportunity to resist it when the subject comes before the United States Congress, but I believe our government has gone as far in the matter as it will go."

With reference to the International Conference Theo. Cribi sent an extract from a letter of Dr. Hirsh, who declined the appointment of representative of the Swiss government. He says: "I foresee, however, that the important reform, the unification of longitudes and time reckoning, for which I have worked a great deal, will not finally be settled in Washington, by reason of the French, who will create an opposition to it, and the probable absence from the Congress of the Germans, as well as by reason of the mistake the American railways have made in adopting in too great a hurry a bastard and irrational solution in introducing the system of hourly meridians, but to postpone is not to give up. The matter will be taken up again later, in a more propitious moment. An article from the *Philadelphia Ledger* from the pen of Coleman Sellers, who writes from Eisenach, was then read."

The reading of this paper was followed by a lively discussion, and it was recommended that it should be published in pamphlet form for circulation among manufacturers and machinists.

An article from Joseph Baxendell, astronomer, England, pointed out many fallacies in the papers of President Barnard on pyramid metrology.

A paper was then read from H. W. Oswald, of San Francisco, California. The views of the writer were criticised by Dr. Redfield; Mr. A. M. Searles, Mr. W. Bond and other members. The discussion was very animated. The meeting adjourned for two weeks.

OCTOBER 22, 1884.

Vice President A. M. Searles acted as chairman in the absence of the President. Rev. Mr. Barber, Williston, Vermont, was elected an honorary member, and the Lady Georgiana Needham, Datchet, England; W. E. Chase, Holyoke, Massachusetts; Samuel C. Goodsell, Westville, Connecticut; C. B. Whyte, Hamilton, Canada; A. A. Jones, Williamstown, Massachusetts; and Henry Kellogg, New Haven, Connecticut, were elected members.

A discussion then took place with regard to the annual convention of the Society, and the following resolution was presented by the chairman and adopted: "The annual meeting of the Society will be held as follows: The 8th day of November is the duly appointed day for the purpose, but in view of the fact that the day following is the Sabbath, which will interfere with the attendance of some members from distant parts, the annual meeting will be held on Tuesday, the 11th of November, at the Society's rooms in Cleveland, Ohio. At this meeting the election of officers for the ensuing year will take place. A charter legalizing the Society's existence in the State of Ohio will be presented for adoption, and papers will be read and discussed."

All persons interested in the objects of the Institute will be welcomed at the convention. Members who are prepared to read papers on the occasion will please notify the President of their intention without delay. Accommodation will be provided for members from a distance.

Letters were then read from several members. J. E. Hilgard, of the United States Coast Survey, Washington, wrote with reference to the International Conference. He says: "You need not think that the convention will have any influence upon the adoption of the metric system. The definition of the power of this convention is so circumscribed that directly the metric question cannot be touched. Indirectly, England will doubtless

be so much complimented by the adoption of the Greenwich meridian as to make her become a party (as indeed she has already done) to the International Bureau of Weights and Measures near Paris, but she will not budge from the two-foot rule until long after the Americans have given up the Anglo-Saxon units—observe that we are much more facile in change than the English.

"The resolutions of this convention are a foregone conclusion. They will simply recommend Greenwich midnight and the reckoning half way round in each direction—in fact just what we are doing now. The whole business of the International Convention is gotten up in order to save the *amour propre* of such small countries as France and Spain (who have prime meridians of their own) by giving them an opportunity to accede to the expressed wishes of the whole world."

This letter was received before the convention adopted Greenwich as the prime.

Mrs. E. Bedell Benjamin's paper on "The Sphinx" was then read by the Secretary. It was heard with rapt attention and occasioned a spirited discussion, in which Mrs. A. M. Searles, Dr. Redfield, Mr. Joslyn and others expressed their views. The meeting then adjourned till November 5th.

#### TRANSACTIONS OF THE NEW YORK AND NEW JERSEY BRANCH OF THE INTERNATIONAL INSTITUTE.

An important regular meeting was held at room No. 24 Cooper Union, New York City, on the evening of September 24, 1884. The meeting was called to order by Vice President Kellogg, who invited Lieut. C. A. L. Totten to act as secretary pro tem, in the absence of Mr. J. N. Wing. Present at the meeting and taking part in its discussion were representatives from several leading architectural, mechanic and physical societies, who had come together to confer upon the metrological questions now before the country, in reply to a printed circular sent out requesting such attendance.

After the usual routine of business, during which the chairman detailed the objects of the International Institute to the visitors, Colonel Chester, chairman of the committee to correspond with the Executive of the United States relative to the appointment of delegates to the International Congress on Prime Meridian, made his report. Colonel Chester then discussed the subject in general as correlated with metrics, and the necessity of a nomenclature and method in the technology of forces, etc., and of computing longitude and time. During the evening extended remarks were made, in order, by the following named gentlemen: Rev. A. D. Barker, Jacob M. Clark, C. E., and Mr. O. P. Hatfield, Treasurer of American Institute of Architects. The remarks of all these gentlemen were of the most interesting and important nature.

At the termination of the remarks the following resolutions were passed by those present:

*Resolved:* That it is the sentiment of this meeting that the International Convention called by the United States Congress for the purposing of determining upon a standard meridian, has no right to go beyond its commission and discuss, even as a measure of compromise, any system of weights and measures.

*Resolved:* That the thanks of this Institute be extended to the press for co-operation and notices of our meetings.

*Resolved:* That this Institute appreciates with thanks the courtesy of the *New York Evangelist*, and the *New York Observer* extended in behalf of the objects of our association.

*Resolved:* That special thanks be proffered to Rev. A. D. Barber, of the *New York Observer*, for important investigations, and for his valuable and instructive address this evening.

*Resolved:* That Rev. A. D. Barber, B. S. Church, C. E., Jas. Kitchen, Esq., Geo. Henry Felt, C. E., Chas. K. Graham, C. E., and C. W. Havemeyer, Esq., be constituted honorary members of this Branch, and that the secretary be instructed to forward them copies of this resolution.

There being no further business before the meeting, it adjourned to come together at the call of the President.

C. A. L. TOTTEN, U. S. A.,  
Secretary Pro Tem.

## EDITORIAL NOTES.

Important papers, read at a meeting of the New York and New Jersey Branch of the International Institute, by Colonel Stephen M. Chester, Jacob M. Clarke, C. E., Lieut. C. A. L. Totten, Rev. A. D. Barber and Mr. O. P. Hatfield, arrived too late for publication in this number. We hope to present them to our readers in a subsequent issue.

In consequence of a press of matter we are obliged to postpone the publication of able papers by J. K. Hornish, H. W. Oswald, Rev. H. G. Wood and F. Hess; also, of a large number of important letters and the systems of tables that we proposed to compare in this issue. For the same cause we have held over a portion of Mr. Latimer's paper on "The Unveiling of Isis." It contains some wonderful prophecies concerning America, chiefly gleaned from Charles Sumner's work, with a graphic summing up by Mr. Latimer.

My friends, members of the Institute and readers of the Magazine, I promised in my last to present you my investigation touching the relation of the subject of Isis to my theme, and to conclude, but moved by the advice of my friends not to omit any part of the details of the incidents which have occurred in my experience, and called suddenly away from my home and place of business, here, upon the rocky mountains in Idaho, overlooked by the hoary peaks, covered with eternal snows, which rear their heads above us, surrounded by hardy miners, who,



with their engines and drills and hammers, are perforating and piercing the mountains upon every side, and drawing therefrom their hidden treasures, which are now bringing our country up to the highest point of wealth and prosperity and fulfilling the visions and dreams of our voices, prophets and poets, yet to be extended farther than the imagination of poet or sage ever dreamed or thought, I have departed from my programme and present you another chapter. It shall be for you to judge whether they are words in the right place. In the next paper, if possible, I will conclude, presenting you with those mysterious links in the chain of evidence which, I feel sure, will prove that our country was the burden of the myths, the glory of the constellations, the song of the poet, and the inspired words of the prophet of the Lord.

CHARLES LATIMER.

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## REVIEWS.

THE WORD, THE WORLD, THE BRANCH. By J. Leyland Feilden, Esquire, author of "Links in the Chain of Evidence Connecting Israel and England;" "The Gentiles and the Times of the Gentiles;" "Israel Jubilee, or 1882;" "Israel Ubiquitous," Etc., Etc.

Mr. Charles Latimer sends us from Idaho Springs, Colorado, a comprehensive review of this book, which we will present in our next issue. Mr. Feilden is a member of our Institute, earnestly devoted to its objects. We ask his fellow members to give his works a hearing. They are published by Robert Banks, Racquet Court, Fleet Street, London, England. It is a most remarkable work, and we tender our grateful acknowledgment to the author for his consideration and attention in sending it to us.

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We call the attention of our readers to an able work by J. P. Weethee, Millfield, Ohio, "The Coming Age; Its Nature and Proximity." Price \$3.00. The book can be obtained from its author, or from C. H. Jones, No. 77 Clark St., Chicago, Ill.

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## PROF. VAIL'S THEORY.

After examining this Theory we feel disposed to place some of its important features before our readers. Ten years ago Mr. Vail published a little volume, entitled 'The Waters Above the Firmament,' which was intended to show that the earth at

one time possessed an annular system, or system of rings and belts of aqueous vapors and other matter, similar to Saturn and Jupiter. A second edition, greatly enlarged, is now being prepared for publication.

He first assumes, what no scientist will dispute, that if the earth ever was in a molten state, all the waters now on its surface were in a vaporous form in a vast atmosphere of great complexity of materials. He next by a mathematical and philosophical demonstration proves that if the earth revolved with this great atmosphere, at least once in twenty-four hours, it must have thrown these vapors into rings over the equator.

Having thus established himself upon a rock apparently impregnable, he proceeds step by step, fortifying every inch of his progress, until he leaves the reader without the shadow of a doubt that another grand truth has been discovered. He shows how the innermost ring must have been the heaviest on account of the heavy materials that impregnated the vapors and settled nearest the earth, and, descending to its surface in the first ocean, formed the first sedimentary rocks—the metaliferous rocks of Archaean time.

He shows how the terrestrial heavens became clear again and again, and again and again became over-canopied by vapors descending from equatorial rings. That when a ring of vapors descended into the atmosphere it spread from the equator toward the poles, forming a great greenhouse roof over the world, annihilating the change of seasons and preventing the alternation of day and night on account of the universal diffusion of solar heat and light, and thus becoming a competent cause of all the climatical changes of geologic times, from the ages of eternal spring to those of eternal ice and snow. He shows most conclusively that all the glacial epochs were occasioned by mighty downfalls of these telluris-cosmic vapors in the polar regions. He shows that the dark belts of Jupiter and Saturn are *unconsumed carbon* lifted to their present position from those burning orbs. Says he, "A molten world must have been a smoking world, but a smoking world produced *soot* or *unconsumed carbon*; but soot or carbon must become a *bituminous oxydized* hydro-carbon in contact with air or aqueous vapor, and as the earth *was* a molten mass it subsequently had belts of carbonaceous matter that did descend on the earth, whose very presence is demanded by inexorable law to account for the coal formations of the world."

He shows that every geological age was introduced first by a wide-spread fall of waters, followed by continental upheaval and rock plication, which can only be explained by an augmen-

tation of oceanic waters. This he makes so plain that even a child can see that it must be true.

When the geologic ages have closed, he simply *proves* apparently beyond a peradventure, that the last or outermost ring of vapor descended into the air and spread as at other times from the equator to the polar regions in its effort to reach the earth, causing all the phenomena alluded to in Genesis, and here our author shows himself complete master of the situation by harmonizing every minutiae with *law*. The six days of creation are explained on principles unthought of before. Eden and its entire field of mysteries assume a grandeur before unknown. The deluge becomes a philosophic necessity.

Over all this the reader must stand astonished and amazed ; we simply confess our surprise at the unspeakable harmony (proven as it is by the very light of law), existing between Genesis and the book of nature. It becomes the duty of every student of nature—nay, of every man, woman and child to read and examine this great work of Prof. Vail's, who has promised us to publish his book of 400 octavo pages as soon as he can be sure of selling 1,000 or more copies. Let the readers of the STANDARD send their pledges to him at Barnesville, Ohio. The book will not cost over \$2.00, possibly less.

#### MONTHLY RECEIPTS FROM SUBSCRIBERS TO THE INTERNATIONAL STANDARD FROM SEPTEMBER 1ST TO OCTOBER 31ST.

SEPTEMBER—Mrs. D. White, \$10; Herbert Wallis, \$10; Dr. John B. Kellogg, \$10; E. Coombs, \$2; George Cheesman, \$2; Jesse Opperman, C. E., \$2; Mrs. Lucretia R. Garfield, \$2; Dr. John Forrest, \$3; B. F. Morse, C. E., \$2; F. A. R. Winter, \$15; Geo. Engell, \$2; Jonas Pierce, \$5; John B. Jervis, C. E., \$5; A. H. Stebbins, \$2; W. K. McAllister, \$1; R. W. Burnett, \$25; A. M. Searles, \$3.50—Total, \$101.50.

OCTOBER—Henry Kellogg, \$4.99; Lieut. Walter Alexander, \$2; Lady Georgiana Needham, \$2.03; Lieut. W. L. Buck, \$2; A. A. Jones, \$2; W. E. Chase, \$4; C. B. Whyte, \$4; Samuel Goodsell, \$2; J. Hornish, \$2; P. O. Box, Keelville, Kansas, .20—Total, \$25.22.