OUR ANCIENT FRIEND AND BROTHER, THE GREAT PYTHAGORAS

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"Let no one ignorant of Geometry enter here"

In our Masonic adventure we encounter the great Pythagoras more than once. The first meeting occurs in the Third Degree in the company of those mysterious but compelling *Hieroglyphical Emblems* with which we are encouraged to make ourselves familiar. We are not told much, being only presented with one paragraph of information, which one might say, contains a few odd statements. We hear that Pythagoras invented the mathematical formula that is known as the *Forty-Seventh Proposition of Euclid* (better known to us as the Pythagorean Theorem). That he traveled all over the known world: Africa, Asia and Europe (it is more likely that he kept to the Mediterranean rim). That he was initiated into several orders of priesthood (obviously each must have disappointed him). From this point the paragraph begins to take on a stranger twist. We are next told that he was raised to the sublime degree of Master Mason (since Pythagoras lived in the 6th century B.C. we can really count ourselves as being the world's oldest Fraternity!). And finally we are informed that when he first realized the relationship that the Theorem defines, he exclaimed EUREKA! I guess that is just a piece of wisdom trivia that has been handed down for 25 centuries. And because of his great excitement he sacrificed a hecatomb -

which is a great public sacrifice of probably 100 oxen. This is even stranger knowing that Pythagoras was a vegetarian and is one of the earliest Western philosophers to teach the doctrine of the transmigration of souls - that souls are immortal and are continually reborn into new bodily forms – not necessarily in an ascending manner.

We may be inclined to take lightly this part of the *Lecture* due to its quasi-historical nature and oddities but still garner some feeling of respect and acknowledgement for an ancient philosopher and mathematician. But upon closer examination of this paragraph we find that such a casual attitude might be a mistake. I think we can be generous and give the author some credit and assume that there is something more within what he said (I think the paragraph was taken wholly from Thomas Smith Webb's work). One of the first things that come to our attention is the fact that Pythagoras is one of the only if not the only "outsider" mentioned in all the Blue Lodge Degrees. This fact alone gives us pause to wonder why the authors of our Masonic lectures have spotlighted Pythagoras in this way. So why was this man given such high esteem in our Fraternity?

Pythagoras

Pythagoras was probably born about 570 B.C.E. on the island of Samos off the coast of Turkey. He was an Ionian Greek and at about the age of 40 emigrated to Croton in southern Italy where he founded a philosophical and religious society. Around 510 B.C.E. it was persecuted and many of its leaders were killed. Pythagoras resettled but eventually it happened again and the fraternity was scattered. Pythagoras himself died around 490 B.C.E. Pythagoras, like Socrates and Jesus, never wrote anything. Neither did his contemporaries. We do know a little about Pythagoras and the Pythagoreans from later fragments of writing that mention him. Much of the material provides us with a fantastic magus of major proportions: an expert in powerful rites, displayed supernormal powers and had a golden thigh! And we all know what the "thigh" is a euphemism for in Biblical passages and around the ancient Near East especially in the practice of placing your hand upon when taking oaths (remember this the next time you "testify"). The earliest substantial attempt is from Plato who was born some 60 years after the death of Pythagoras. His school grew into a sort of brotherhood

and fraternity with vows of secrecy. The emblem of the society was a pentagram. At each point of the star was a Greek letter which all together spelled "health" (- Upsilon, gamma, iota, theta, alpha). And we know that Apollo was of major importance to their society. We know that:

> *"In earlier Greek theology, the Logos was personified in the shining figure of Apollo, the god of light, music, geometry, and harmony, whose nature most closely reflects the highest realizations of the Greek Spirit. As the god of harmony, he is said to have invented all music. Apollo was the god of reason (logos), yet he was also a god of prophecy. He is a personification of the celestial harmony, ...He was the leader of the nine Muses, the goddesses of inspiration and the arts,..."* (David Fideler, *Jesus Christ. Sun of God*, page 63)

Although Pythagoreanism is of vast extent and far beyond the scope of this paper, so for brevity we can list its main doctrines as: "the immortality of the soul, philosophy as an assimilation to the divine, and the mathematical basis of the cosmos." (*Encyclopedia of Philosophy*. Vol. 7, page 39) But the particular interest of this paper is the *Hieroglyphical Emblem*: the Forty- Seventh Problem of Euclid.

The Forty-Seventh Proposition of Euclid

The Pythagorean theorem states that for any right triangle the sum of the squares of its two legs equals the square of its hypotenuse ($a2 + b2 = c2$). Or we could frame it as the sum of the square of the horizontal and the square of the perpendicular equals the square of the hypotenuse. We know this formulation was known before Pythagoras - there is evidence in ancient Egyptian work, ancient China (the Chou Pei manuscript), and the megalith builders. Regardless, it is attributed to Pythagoras and two hundred years later Euclid compiled his *Elements of Mathematics* where this particular proposition is found in *Book One*.

> (47th) In every right angle triangle the square on the hypotenuse is equal to the sum of the squares on the other two sides.

(48th) If the square described on one of the sides of a triangle is equal to the square described on the other sides, then the angle contained by these two sides is a right angle.

This theorem has been called the root of all geometry and the cornerstone of mathematics. The practical applications alone are worthy of the high esteem that Masonry affords it. And this is the interpretation of the lecture that is most considered when masons speak of it. But the meaning of this *hieroglyphical emblem* does not stop there.

The emblem we are usually presented is the 3,4,5 right triangle in this fashion: The vertical line is of 3 units, the horizontal is of 4 units, and the hypotenuse is of 5 units. Not only is our attention called to this geometrical figure in the *Master Mason* degree, it is also prominent in the Scottish Rite in the 20th Degree - *Master of the Symbolic Lodge* and in the 25th Degree - *Knight of the Brazen Serpent*.

Rex Hutchens, commenting upon the 20th Degree in his book on the Scottish Rite explains that:

Nine is a perfect number, being the triple of three. There are nine candles in three groups of three each on the East, West, and South of the Altar. They form a graphic representation of the 47th Problem. … Because of the mystic meaning associated with numbers by the ancients, they considered the most beautiful triangle of all, the right-angled triangle with sides of 3,4 and 5 units of measure. (Rex Hutchens, *The Bridge to Light*, p.171)

In the 25th Degree commentary Hutchens describes the setting of this degree:

The ceremony takes place in four apartments. They are all remarkable in their simplicity. The first is called the House of the Earth. ...The second apartment is called the House of the Planets. The third apartment is ... styled the House of the Sun and Moon ... The principal chamber is called the House of the Light. Nine lights (candles) are arranged on the altar … forming a representation of the Pythagorean Theorem ... (*The Bridge to Light*, p.215)

Just to be clear: If you situate a 3x3 square, a 4x4 square and a 5x5 square together to form an inner triangle there will be 9 points where the squares meet in addition to the outer corners.

The evidence that the particular triangle alluded to in the Masonic Monitor is the 3,4,5 right triangle can also be derived from the odd comments about Pythagoras' exclamation of "Eureka" in the Grecian language. Here is where we can begin to apply the investigative tools of what is called gematria. Recall that the ancient letters of Hebrew and Greek were also numbers. (The Hindu-Persian-Arabic number system that we all know and love was not even used by European mathematicians until Fibonacci encouraged its use in 1202 C.E.) The correlation of numbers with letters gave ample opportunity to nest hidden meaning within words, phrases, and names. For example, if we spell the word "Eureka" in Greek and consider the letters as numbers instead of letters, add them up, the total value is 534 - the units of this special triangle.

Maybe we can even find hints of this geometry in earlier Masonic degrees. A very interesting technique of symbolism can be seen when two different types of symbolism are fused together or alluded to by one another such as a legend that contains mathematical symbolism. For example, many of the blacksmiths of the gods were crippled or lame. In many cases the Sacred King was lame. The destiny of the Sacred King was to lose his life as a sacrifice; an act which will regenerate the world. Usually the lameness and sacrifice was deliberately caused. The Roman poet Virgil, in the epic *Aeneid,* tells of the heartbroken Carthaginian Queen Dido resolved to die offering herself as a victim to the fire. Virgil writes: "… beside the altars, with one foot unshod, she calls as one about to die upon the gods and upon the doom-witnessing stars." There is an association between lameness with the idea of sacrifice and redemption in having one foot unshod. There is a Byzantine icon painting known as "Our Lady of Perpetual Help". This painting is of the Madonna holding her Divine Child. On each side of them there is an angel who holds some of the tools associated with the Crucifixion. The icon portrays one shoe falling off the Divine Child as he is gazing at an angel. We can even associate this idea in the slanting footrest of the Russian Cross in the Eastern Churches.

We can develop this further. In geometry, there are three types of triangles: equilateral, isosceles and scalene. The equilateral triangle has 3 equal sides; the isosceles has 2 equal sides, and the scalene triangle has no equal sides. Scalene means "uneven", it also means, "limping". Of all the infinite scalene triangles, the one thought of by the ancients, as special - the king of them all, was the 3,4,5-unit triangle that always provides the angle of the square.

This specific triangle had the special properties and it grew to have mystical properties as well. In so considering the symbolism of the iconic Egyptian structure considered as the epitome of the tomb, one author states:

And so beneath the ideal pyramid, with its four great equilaterals pointing heavenward as they converge above the center of the basal square... there would be sacrificed, hidden in the foundations so to speak, a limping but necessary scalene, supplying the all-important right angle for the base and for the central elevation. (Denning & Philips, *The Magical Philosophy*, Vol. 2 p.58)

As we consider geometry as symbolism as well as Truth, we have to think of it as the ancients did. Pythagoras is reported to have said "All is Number" and in *The Republic*, Plato wrote: "The knowledge at which geometry alms is the knowledge of the Eternal." The Eternal was to Plato the archetypal Forms, or the timeless truths of existence. In other words, they are the foundation of the universe. That aspect of the universe that always was and ever will be.

The Mystical Symbolism of the Pythagorean Triangle

According to Plutarch (46 - 120 C.E.), the Egyptians attributed the sides of the triangle in this fashion: the vertical line was of 3 units and attributed to the god Osiris. The horizontal line was of 4 units and attributed to the goddess Isis. And the hypotenuse was, of course, 5 units and attributed to the falcon-headed god Horus, the son of Osiris and Isis. It is noteworthy that Plutarch studied in the Platonic *Academy* at Athens and was a priest at Apollo's temple at Delphi for 20 years. In the myth of Osiris

and Isis, Osiris is killed by evil forces, which makes Horus the "Son of a Widow" and links him with the Masonic grandmaster Hiram.

The units of the triangle's side are significant. In more recent times, the three units of the vertical line of Osiris have been attributed to the three alchemical principles of Salt, Sulphur and Mercury (direct correspondence with the Hindu concept of the three Gunas: Tamas, Rajas and Sattva.). All things are manifestations of these three principles according to alchemical doctrine. The four units of the horizontal line of Isis relate to the ancient classification of the substance of the material world as consisting of four elements: earth, air, water, and fire. These are of course the four Ancients. (Hindu classification: prithivi, vayu, apas, tejas). The ascending line of Horus, the hypotenuse with its five units represents the five kingdoms of nature: mineral, plant, animal, human, and the Fifth Kingdom (that which we are becoming – the completion of the Work). This is the Path of Return. The ascending line finally connects back up with the top of the line of Osiris. The Fifth Kingdom symbolizes the Adept as one who has consciously reunited with the Source of all Being. (See Paul Foster Case's *The True and Invisible Rosicrucian Order*)

The angles that this special triangle expresses are significant as well. Here we must dive deeper into the realm of the previously mentioned practice of *gematria* (actually another method of exegisis). Not only is it concerned with exchanging the letters for their numerical value but there is the assumption that words with the same numerical value are in some meaningful way connected. The set angles of the 3,4,5 triangle are 90 degrees, 37 degrees, and 53 degrees (in whole numbers). If we can understand that this geometrical figure is not only of the greatest practical value but also of the greatest mystical significance we must assume that every aspect of it sheds further Light upon our Quest. We can look upon this emblem as representing the ongoing incarnation of Spirit and the ensuing ascent of consciousness by building higher and more complex forms in which to better express its inmost nature.

Looking at where the vertical meets the horizontal (the conjunction of the Osiris and Isis) we have the 90-degree angle - the angle of a square. By Hebrew *gematria* we know right away that 90 is the value of the Hebrew word for Water - *Mem* (spelled by the letters: mem-yod-mem). This hidden

attribution to "Water" can be seen in the alchemical statement: "Our Sun and our Moon are conjoined in our Water." The union of the Father and Mother.

The angle at the conjunction of Isis and Horus, the beginning of the ascension of the hypotenuse, is 37 degrees. We know from our Qabala that 37 is the "number" of Adam's second son - Abel (Hebrew spelling: heh-beth- lamed). Theologians have often considered Abel as a prototype of Christ. The number 37 is also associated with the Hebrew word *Yechidah* - the Inmost Self (yod-cheth-yod-daleth-heh), and the word for "the Ark" used in the Greek translation of the Hebrew scriptures in reference to both Moses and Noah is - *he thibe*. (Spelled in the Greek letters: eta theta, iota, beta, eta). The ark was the instrument used to ensure the continuing existence of humanity and thus a means of salvation.

The angle at the conjunction of Horus and Osiris at the head of the comer is 53 degrees. This is the symbolical union of the Father with the Son. The Hebrew word whose value is 53 includes "Garden" - as in the *Garden of Eden* (*gan*: gimel-nun) and "Stone" (*ehben*: aleph-beth-nun). In the Greek we find the word "Acacia", the sprig of which symbolizes immortality (alpha-kappa- alpha-kappa-iota-alpha). A further look at *Ehben* - stone- reveals another hidden point of light. If we look at the letters or Masons might say – to letter it, *Ab* or father (aleph-beth or 3) and *Ben* or son (beth-nun or 52) can be joined in the letters aleph-ben-nun (53) or *ehben* – the Hebrew word for stone. The angle at the head of the corner has the same numerical value as the word for stone (53). Said in more poetical words: the father and son are conjoined in the Stone.

One further elaboration of these ideas - and we could continue this for some time - is the connection of Horus with Hiram Abiff, the archetypal grandmaster (and Christ, Krishna, and Brother C.R. for that matter). The numeral value in Hebrew for the letters spelling Hiram Abiff totals 273. The same value is found in the Hebrew words *Aur Genoz* meaning: the Hidden Light. We can also consider the familiar phrase in *Psalm 118:22* "the stone which the builders refused". In Hebrew it is pronounced *ehben masu ha-bonim* and the value of this total phrase - "the stone which the builders refused" is 273 just like Hiram Abiff and the Hidden Light. And if we listen to the syllables of this phrase out of *Psalms* we can find further light on the significance of the substitute for the Lost Word. Furthermore, if we just take

the phrase "refused by the builders" (*masu-ha- bonim*) it equals the value 220. This is another very important number because the *gematria* is related to the Hebrew word for "lamb" - *kar* (Spelled: kaph-resh), the Latin *Christus Deus et Homo* - Christ, God and Man; and *Novus Ordo Seclorum* - A New World Order. And there are many more suggestive correspondences to the number 220. (Again, see Paul Foster Case's book *The True and Invisible Rosicrucian Order.*

With all this behind us I think that we can conclude that the value of the Pythagorean triangle to Masonry is beyond compare. It leads us into the inner recesses by its very nature. It links us with the inner teachings of the Ancient Mystery Schools even taking us back to the construction of the Pyramids with their triangular faces, a four-fold base, and five corners; back to the megalithic builders, also shedding light upon the cryptic words of the alchemists, aligns us with our Hindu brethren, binds us with the three pillars of the Qabalistic Tree of Life - Mercy, Severity, and Mildness and relates to our own Masonic pillars of Wisdom, Strength, and Beauty and most significantly with the Grand Master of the Temple.

I am indebted to the following works for their ideas on this subject:

1. <u>The True and Invisible Rosicrucian Order</u> by Paul Poster Case

2. <u>A Bridge to Light</u> by Rex Hutchens

3. <u>Jesus Christ: Sun of God</u> by David Pideler

4. <u>Hermetic Masonry</u> by Frank C. Higgins

5. <u>Geometry for the Practical Man</u> by J.E. Thompson

6. <u>The Magic of Mathematics</u> by Theoni Pappas

7. <u>Stellar Theology and Masonic Astronomy</u> by Robert Hewitt Brown

8. <u>Restorations of Masonic Geometry and Symbolry</u> by H.P.H. Bromwell

9. <u>The Magical Philosophy Vol. I - V</u> by Melita Denning & Osborne Phillips