Pythagoras – the Man and his significance to Freemasonry

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There's a well-known story on most college campus about a professor who always started his lecture by making a gesture of drawing two commas in the air with his right hand. And he always drew two commas in the air with his left hand after he finished. Students being what they were then, it took half a semester before one of them worked up the courage to ask him what he was doing. "They're quotation marks," he said. "One way or another, someone else has said everything I have to tell you. I'm only quoting." It's well for those of us who are engaged in Masonic education to remember that. In the past three centuries, many brilliant minds have written a great deal about Masonry. I can't remember who wrote even half of everything I have read. [Roberts- Phililathes]

As a preamble to this paper, let me express my thanks to you for inviting me to speak. The topic of Pythagoras has been an intriguing topic for many years to me, but more so since I have joined Freemasonry. It became more intriguing when I was presented with my Past Master's Jewel and the mention of his name as having been a Mason. Well, that was enough of an incentive to begin to explore the life of Pythagoras.

The next event which caught my attention came after I facilitated a meeting of Past Masters back in 1990 as part of the first Victoria Masonic Day. I questioned a group of twenty Past Masters about the characteristics of the ideal Past Master, the perceived characteristics of a Past Master how Past Masters could be utilized more effectively in a Lodge without them becoming overbearing and in some cases dictatorial. I use words here that came from the frank discussion of 14 years ago.

Where would one start to investigate and examine this interesting character from early Greek history? I began to search for Masonic references one might find - Mackey, Carr, Jones.

Mackey gives a history of the man with emphasis of his doctrine, and his area of study and expertise. There is also an entry about the Pythagoras School established by him in Crotona. More later. Mackay also wrote a book entitled, "*Lexicon and History of Freemasonry*" and several pages are assigned to our topic.

Harry Carr has no mention of Pythagoras in references I have.

Bernard Jones notes five page references the most substantial is the understanding of the mathematics of the 47th proposition, the solution, and how the mathematics of the formula works. He also discusses the shape of the Past Master's Jewel as a miniature representative of Euclid's drawing and proof.

In a book entitled "*Masonic Antiquities of the Orient Unveiled*" by *The Author,* one chapter is assigned to Pythagoras, his birthplace, education, travels, philosophy, and the end of his life.

In summary, there is sufficient information from Masonic books to write a paper on Pythagoras' life and school, with some reference to Masonic connections. However I was more interested in the more recent writings about the man. So where to go for more updated references? In checking a search engine for the internet and entering Pythagoras, in 0.14seconds, a list of 393,000 sites were listed which contained the word 'Pythagoras.'

Much of my work then has been drawn from the Internet. And like books, one has to take what is said with a dose of skepticism with respect to true knowledge — proven documented facts — and quasi knowledge — legends which seem to have continued for many centuries and continued to be used as references in modern papers.

So I approach this paper with a little wariness and care, but all the same hope you enjoy the journey into a story of an intriguing figure of history and of Freemasonry. You will I think understand why he has become a part of Freemasonry and what hidden importance he truly has to the craft.

Beginnings

What was most obvious to me at first glance was that facts expressed in one reference were not supported in another. Dates especially were different for same events; be prepared for some comparisons.

Pythagoras was born in Samos a Greek Island off the coast of Asia Minor what is now modern Turkey. The date of his birth is not known exactly. One reference had Pythagoras born in 580 BCE another 569BCE and still a third 560BCE, the last date having been found duplicated several times in further references. Whether this is proof that 560BCE was the year of his birth or whether it is proof that all writers using this date copied from the same reference is hard to prove.

There is no history of his early days, whether he lived on the island or elsewhere. But about 545 BCE he began to travel about Egypt, Chaldea and Asia Minor. Chaldea is situated in the southern regions of Babylonia or lower Mesopotamia corresponding to Southern and Central Iraq. In its glory days, Chaldea was the centre of power of the Babylonian Empire.

His travels took him to areas of the greatest knowledge at that time. It seems to be generally accepted that his own personal philosophy was garnered from the learning he received when travelling through these countries. Different knowledge, philosophies, beliefs, all were to come together in his school which he created and taught at for several decades.

In Egypt it is believed that he visited the temples and took part in many discussions with the priests. Perhaps this is what we understand as his initiation into the degrees.

Mackey reports that in travelling "he was initiated in each of these countries for the purpose of acquiring knowledge." (p. 622 Mackey 1907). The initiation was not a formal ceremony as we know it, but a series of talks and conversations with high priests, teachers, and scholars who would impart knowledge to those who sought it, and to those they felt worthy of receiving it. It is said that Pythagoras was instructed by Ezekiel, maybe even Daniel while visiting Babylon. (Mackay - Lexicon p.393)

The School of Pythagoras

As far as is known there are no writings of Pythagoras available. Disciplines of the school included, silence, music, incense, physical and moral purification, rigid cleanliness, a mild asceticism, (plainness), utter loyalty, common possessions, secrecy, daily self examination and pure linen clothes. [Stanley: p.4] As Stanley mentions, this seems to be the origins of Monastic orders.

After his death it was his followers who wrote of his philosophy, his life and his school and it was from these writings that have been recorded, that today we can learn about the philosopher's life and of his school.

It is said that Pythagoras was the most virtuous and taught the purest doctrines of the philosophers of his day. (Mackay 1911)

He set up his school – the Pythagorean School – in Crotona (krōtō´ne) or Croton , ancient city in southern Italy, on the east coast of Bruttium (now Calabria), at that time a Greek colony. The school has been considered by some to be the model of a Masonic Lodge (Mackay 1907)

Students of the school wore simple clothes and were obliged when entering to surrender all worldly possessions, volunteer to three years of poverty and to five years of silence.

Scholars were divided into two groups – the exoteric, those who attended public assemblies, and the esoteric, who attended the true school, to whom Pythagoras called his friends and companions. [In *Masonic*

Antiquities of the Orient Unveiled, the author states that choice followers were called the esoteric and others in general were called the exoteric. [p. 425 Author 1875] Candidates for the school had their backgrounds severely investigated before they were chosen to become members, and once chosen, remained in the school for many years. One could request to leave the school before completing studies and a mock burial was performed and a monument erected in the ex-student's memory. [Mackay 1907]

There were three degrees or levels of learning that the scholars ascended to. First MATHEMATICI – the study of exact sciences. Second THEORETICI – the knowledge of God and the future state of man. Third the highest degree communicated only to a few "whose intellects were capable of grasping the full fruition of the Pythagorean Philosophy," (Mackay 1907). No name is supplied for this third level.

In a paper from J.J O'Conner and E.F. Robertson (www-gap.dsc.st-and.ac.uk) the authors state that there were two levels of members of the school. The first Mathamtikoi, were followers, who lived permanently with the society, and were taught by Pythagoras himself. They adhered to the following beliefs:

[1] that at its deepest level, reality is mathematical in nature
[2] that philosophy can be used for spiritual purification
[3] that the soul can rise with the divine
[4] that certain symbols have a mystical significance
[5] that all brothers of the order should observe strict loyalty and secrecy   [P.3]

The outer circle of the Society was known as the Akousmatics, living in their own houses and only coming to the school each day.

From the readings this author has made, it is clear that there was a division of followers, there was secrecy, and there was a loyalty to Pythagoras. Indeed it was said that followers quoted the leader by saying "The Master said."

Stanley [1998] identifies three levels of membership:
1. novices or "Politics"
2. Nomothets, or the first degree of initiation
3. Mathematicians   [p. 4: Stanley]

A digression for a moment if you will permit: Mackay refers to a question found in early Masonic Manuscripts which had confused early Masonic scholars for years. It is said the school was:

>…distinguished for the piety as well as attainment if its disciples. They were animated only by a reverence for the deity, and love of their fellow-beings…their brotherly love was such that they were accustomed to adopt the noble sentiment "my friend is my other self."
>
>   [p. 393-394 Mackay 1911]

Pherecydes [FER er SI dees] (circa 540 BC), is traditionally credited to be the teacher of Pythagoras. He is likely to have been the first to proclaim the immortality of the soul, if not second to Thales, who is considered the first known Greek philosopher, scientist and mathematician (624 – 547) and the originator of the principle of metempsychosis, the immortal human soul passing from one body to the next – human or animal – after the death of the flesh. Some suggest that it was Thales who first learned about Geometry from Egypt and that he taught Pythagoras. Other writers seem to feel that Pythagoras learned his understanding of Mathematics – numbers and geometry – by his own visits to Egypt and other places.

Iamblichus, a biographer of Pythagoras, mentions that music was also a strong influence on the lives of the students of the School. They sung hymns to Apollo regularly using the lyre as accompaniment. Pythagoras had already worked out the ratio of a vibrating string to the notes it produced. He was the first to recognize that by halving a vibrating string produced a note an octave higher - ratio of 1:2. A fifth was in the ration of 2:3 and a fourth was the ration of 3:4.

Bertrand Russell, quoted by B. E. Jones in his book *Freemasons' Guide and Compendium*, says that Pythagoras was 'intellectually one of the most important men that ever lived,' [p. 438: 1959]. And Russell continues - that in the area of mathematics, began with him (Pythagoras).

The School of Pythagoras was involved in religious, political and philosophical goals although it ha already been mentioned that the members of the school had to follow certain strict rules of obedience, silence, abstinence from food, simplicity in dress and personal possessions, and a regular self examination. The Pythagoreans believed in the immortality and the transmigration – the reincarnation - of the soul. For the pupils of the school there were two ways in making order out of chaos of the world around them, through philosophy and through mathematics.

Mackay seems to build his discussion of Pythagoras to resemble Masonry in as many ways as possible. He mentions the assemblies meeting due East and West; that the disciples of the school who traveled through other countries made themselves known to each other by certain signs, [not explained anywhere] to the extent that if one member of the school heard of another in distress that he would travel over seas and risk fortune to help that brother – [relief of the distressed, helping a brother in need].

The symbols used by Pythagoras for his followers were geometrical in nature and had specific meanings:-
- *right angle – an emblem of morality and justice,*
- *equilateral triangle – a symbol of God the essence of light and truth*
- *square – to the Divine mind*
- *cube – the mind of man*
- *point within a circle and the dodecahedron – symbols of the universe*
- *triple triangle – an emblem of health*
- *Y – a symbol of the course of life.*   [p. 395 Mackay 1911]

The Pythagoreans considered Geometry as being the highest form of mathematical study. Mathematics was used to understand the world about the scholars. This school advanced the knowledge of mathematics and numbers more than any other of its time. Numbers were considered as a representation of all things: it was almost a religious belief.

"The Pythagoreans…having been brought up in the study of mathematics, thought that things are numbers and that the whole cosmos is a scale of numbers."   [www-gap.dsc.st-and.ac.uk/]

As an example, the number 10 was significant because it was the sum of the first four numbers 1 + 2 + 3 + 4, known as the sacred tetractys. A tetractys means a set of 4 things attributed to the Greek Mathematician and Astronomer Theon (c. 100CE) [Stanley 1998]

Numbers	1	2	3	4
Magnitudes	Point	Line	Surface	Solid
Elements	Fire	Air	Water	Earth
Figures	Pyramid	Octahedron	Icosahedron	Cube
Societies	Man	Village	City	Nation
Faculties	Reason	Knowledge	Opinion	Sensation

10 = 1 + 2 + 3 +4 written in a dotted notation formed a perfect triangle:
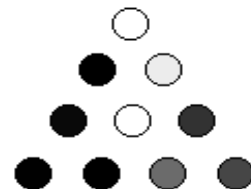
You can begin to see how the school's philosophy was connected strongly with Mathematics.

But of all the mathematical study of Pythagoras nothing has come down so indelibly as his connection with Euclid's 47th proposition. There has been found no reference to any philosophical understanding of the proposition by Pythagoras but its emergences into the knowledge of Mathematics is attributed to him. I re-introduce the famous proposition to you. I say re-introduced because nobody comes through a formal education in Elementary and High Schools without knowing Pythagoras and his theorem…

$$a^2 + b^2 = c^2$$

In any right angled triangle, the square on the hypotenuse is equal to the sum of the squares on the other two sides.

In many sources I read, it is clear that it is questionable if Pythagoras himself discovered the theorem which is attached to his name. In one source it states that "the statement of the Theorem was discovered on a Babylonian tablet circa 1900-1600 B.C." The Sumerians had used it in their measuring. His studies in foreign countries before establishing his school might have been where he first encountered the magic of the theorem and its importance to builders and building.

Another writer claims that possibly a student found the information and passed it onto Pythagoras who let it be known and which, in time, had his name attached to it. Others suggest that he found its original use of it in Egypt where the land surveyor and builders were using the knotted rope to make the 3-4-5 triangle to make things vertical and square. [Demonstration] Enough it is to say that it was this school which brought the old inscription to modern light and to them we must be eternally grateful. But it has to be to Euclid we are grateful for showing the proof which explains why the square of the hypotenuse is equal to the sum of the squares on the other two sides of a right angled triangle. Indeed, the 47th proposition, one of 48 which he described, is the only one which we all seem to remember. [*As a test, does anyone know his 20th proposition? One which could come as a close second to remembering. Answer: Any two sides of a triangle are together greater than the third*.]

It is stated that there are over 200 different methods to prove this theorem. I bring you three, none of which are the standard proof first worked out by Euclid about 300 BCE.

Before proceeding I have to inform you that the use of 3-4-5 as the sides of the triangle are not needed for the Euclid proof. They happen to be the first set of Pythagorean triplets – that is whole numbers – which satisfy the creation of a right triangle. Remember that in the time of Pythagoras, there was no understanding of irrational numbers. √2 was not heard of, it had no value. Therefore a triangle of sides one unit each for the vertical and horizontal sides, was never considered for a right triangle, because there was no whole number for the length of the hypotenuse. No one knew what the true length of the hypotenuse would be. In one reference it mentioned that Pythagoras was the first man to speak of irrational numbers. This fact prompted other learned men from Greece to scorn Pythagoras who were of the opinion that irrational numbers – or whatever they called them – were not possible.

[Demonstration of three versions of the proof of 47th proposition.]

The symbol of the Past Master
No one is certain why or when the diagram of the 47th proposition was used for the jewel of a Past Master. However it is important to note here that it is on the frontispiece of Anderson's Constitutions of 1723.

There is also no explanation of the jewel in any ritual or its philosophical lessons it teaches. All of what follows are ideas from Masons.

First it has to be understood that not all Past Master's Jewels have the 47th proposition of Euclid hanging from a square. In a paper entitled *The Jewel of a Past Master*, by Thomas Green [Ars Quatuor Coronatorum Vol. XIV pp.27-30], diagrams of the Past Master's Jewel from England Scotland and Ireland are shown. [slide]

The old Past Master's Jewel of England used to have the diagram inscribed on a rectangular metal plate hanging from a jeweled ring from one of the sides and with a small metal square. The modern jewel is now similar to what we use in BC, and the diagram is a contour of the shape of the proof used by Euclid in his elements of Geometry. In Scotland the Jewel of a Past Master is a square and compasses and an arc of a circle. In Ireland the jewel is a square and compasses with the capital "G" in the centre.

On our Past Master's Jewel the 3-4-5 triangle is used with lines inscribed upon the 47th proposition related to Euclid's proof of the proposition. In his paper "The Symbolism of the Past Master's Jewel", W. Bro. C. G. Nicholas suggests that:

> the sides of the triangle measuring 3 units represents Spirit, the Supreme Triad [group of three], the side measuring 4 units represents Matter, the lower quartemery ,…the hypotenuse measures five units representing Self-conscious Man.   [p.2, Nicholas, undated]

Earlier in his paper he explains that the three sides of the triangle are assigned to the three principle offices of the lodge, 3 – to the Master, 4 – to the Senior Warden and 5 – to the Junior Warden.

Thus the Master represents the Spiritual world, the Senior Warden the Material world and the Junior Warden the neophyte.

These seem to be connected to the understanding of the three degrees. The Junior Warden represents the novice of the Entered Apprentice as he enters the new world of Freemasonry. The Senior Warden represents the learning and expanding knowledge of the world around him, the Fellow Craft Degree, while the Master represents the Spiritual nature of man, the Master Mason degree where we learn that of the immortality of the soul, a figurative death which awaits us all to rise to a better consciousness of life about us.

To me the jewel signifies one of the progresses a Mason has made in travelling through the chairs of his lodge. Step by step he gains more knowledge of the philosophy of Masonry until rising to Junior Warden he is beginning his journey to rule the lodge. Symbolically his position connecting the spiritual with the physical sides of the triangle implies that he is about to begin his journey towards more understanding.

The rod of three units is held vertical by the Master, while the Senior Warden, with the length of 4 units, places it horizontally, touching the ground. [Demonstration]

Pythagoras was a curious man. He wanted to know what the rest of the world was all about. He had heard of great customs in other countries and was curious to learn, like the new Mason, curious to learn. He learned by travelling, by visiting, synonymous with the Mason travelling to other lodges to learn from other 'cultures,' other lodges.

Having said that, it is my humble opinion that perhaps some brethren may receive this treasured symbol perhaps too soon before they can honestly say that they have completed work in the quarries. The students of the Pythagorean School spent a life time to learn and regulate their lives and actions and only after many years of toil did they feel that they had completed the work of study of the school.

Pythagoras himself was a man of deep learning and understanding. Apart from his travelling and knowledge which he gained, he sensed too the importance of man on this earth.

Our purpose is to build a spiritual building. As the Past Master has worked through the chairs of his lodge, and through extensive reading and contemplation, he should arrive at that moment when he can say that his Masonic learning has made him a better man, one whose sole purpose is to aide his fellow man.

The Master, having completed his work is made a Past Master and for me, there his real Masonic journey begins. His new task is to assist those who are striving for the same end. What he has learned through his travelling, he now imparts to those who continue to strive.

The list of characteristics which Past Masters agreed were crucial for one who wears the Past Master's Jewel, and which were named in a workshop in 1990 in Victoria were:-

- ✓ Supportive
- ✓ Flexible
- ✓ Exemplary
- ✓ Teacher
- ✓ Listener
- ✓ Administrator
- ✓ Concerned
- ✓ Moderating Influence
- ✓ Resourceful

- ✓ Helpful
- ✓ Empathetic
- ✓ Advisor
- ✓ Educator
- ✓ Experienced
- ✓ Leader
- ✓ Ambassador
- ✓ Harmonious Member
- ✓ Effective

It is acknowledged is that some Past Masters 'disappear' from lodges after their term as Master is complete, some still think they are in charge of the lodge from a seat in the lodge and won't let go, and some wholeheartedly embody the intended role of a Past Master and with a quietness, modesty and humility, help other masons on their journey. That is what Pythagoras did, that is what his School taught.

The highly magical workings of the 345 triangle prompted the Egyptians in those ancient times to square their work and to raise square verticals. With the rope or with three rods, Masons could raise verticals and lay square and rectangular foundations that were so true that today, after centuries of standing the weather and wars, they remain superb examples of ancient architecture.

A Master by his position should not only know his work, but also know how to plan and execute work for the lodge, have served as the paternal figurehead of the lodge, shown leadership and support to all brethren of the lodge and the families, and then finally begun to help others in their travels.

Finally, one can also see in Pythagoras the beginnings of the three tenets of our profession, Brotherly Love, Relief and Truth.

Consider for a moment some quotes of Pythagoras, and as you listen to them consider them in the context of the Philosophy of Masonry, its teachings and tenets.

- Above all things reverence thyself.

- Silence is better than unmeaning words.

- Choose rather to be strong of soul than strong of body.

- In anger we should refrain both from speech and action.

- Do not talk little on many subjects but much on a few.

- The oldest, shortest words – 'yes' and 'no' – are those which require the most thought.

- Virtue is harmony.

- Friends are as companions on a journey, who ought to aid each other to persevere in the road to a happier life.

As far as I am aware, the word Pythagoras only occurs in the installation for the Immediate Past Master of a lodge. From the Leland Manuscript there is one question which was part of an early catechism:

Question: How comede ytt [Freemasonry] yn Engelonde?
        Translation - How did Freemasonry come to England?

Answer: Peter Gower, a Grecian, journeyed for kunnyuge yn Egypte and in Syria and yn everyche londe whereat the Venetians hadde plauntedde Maconrye…

Translation - Peter Gower a Grecian journeyed for knowledge in Egypt and Syria and every land where the Venetians had planted Masonry…

The dilemma of early scholars of Masonry was how did a Greek get to have such an English sounding name? It later was learned that Peter Gower was a corruption of the French for Pythagoras - *Pythagore* and that Venetians was Phoenicians. I give this reference only because one can understand the corruption of words which occurred when work was passed from mouth to ear in the early days of the Fraternity.

Next time you hear the installation of the Immediate Past Master in a lodge…

> To this jewel is appended a diagram representing the 47th proposition in Euclid's elements of Geometry. This theorem was the work of the illustrious Pythagoras, and Masonic tradition informs us that during his travels in Asia, Africa and Europe, he was regularly initiated passed and raised in the established degrees of Freemasonry, and that after paying all needful attention to his Masonic duties, he eventually attained the dignity of a Past Master…   [Forms and Ceremonies p. 96 (1982)]

…perhaps you will reflect that what is being told is really the story of Pythagoras, his travels to learn customs of other cultures, and that when he attained of the dignity of a Past Master, perhaps the words imply that we are really speaking of the school he founded on Crotona almost 2500 years ago.

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