

## STUDY OUTLINE No. 14

THE seven liberal arts and sciences are Grammar, Rhetoric, Logic, Arithmetic, Geometry, Music and Astronomy. They were placed here by William Preston to make Freemasonry in the Eighteenth century serve as a liberal education and furnish the outline of a broad field of knowledge. While many of our Masonic scholars feel that this portion of our ritual has become so obsolete that it is worthless, it has effectiveness now if taken in a symbolic sense. These arts and sciences were at one time the sum total of a complete education. Let us consider them as symbolical of the sum total of all useful knowledge today, and strive to attain to as much of it as is possible. Emerson was a prominent advocate of knowledge as the path that led man upward to morality. If we include in our curriculum the knowledge of ourselves and of our proper place in the universe, our duty to God and to ourselves, and make all scientific facts and technical knowledge serve as the means by which to carry them into practice more effectively, there can be no doubt that he was correct. Probably the reason that many doubt his conclusions is because much so-called knowledge is only partial.

Even the study of the seven liberal arts and sciences as given will broaden the average man's vision and he will become more tolerant and will fulfill his obligations more faithfully.

There are many ritualistic references to Geometry which require considerable thought to bring out their application to the science of morality. The "Dew Drop Lecture", which is given occasionally in Mississippi, and which is said to have been handed down for over a hundred years, is included here as helpful to the idea of Geometry as applied to the highest type of philosophical speculation.

### The "Dewdrop" Lecture

"Geometry, the first and noblest of sciences, is the basis upon which the superstructure of Freemasonry is erected. Regarding man as a rational and intelligent being, capable of enjoyment and pleasure to an extent limited only by the acquisition of useful knowledge our Order points him to the study of the liberal arts and sciences and to the possession of knowledge as the most befitting and proper occupation for the God-like endowments with which he is gifted.

"Indeed, all who frequent our Masonic Temple are charged to labor faithfully in the wide and unbounded field of human improvement, from which they are assured of reaping a most glorious harvest, a harvest rich in happiness to the whole family of man, and in manifestation of the goodness of God. Your attention is especially directed to the science of Geometry, no royal road, 'tis true, but to one prepared with an outfit it must prove more attractive than palace walks by regal taste adorned.

"The ancient philosophers placed such a high estimate upon this science that all who frequented the groves of the Sacred Academy were compelled to explore its heavenly paths, and no one whose mind was unexpanded by its precepts was intrusted with the instruction of the young. Even Plato, justly deemed the first of the philosophers, when asked as to the probable occupation of Deity, replied, 'He geometrizes continually.'

"If we consider the symmetry and order which govern all the works of creation, we must admit that Geometry pervades the universe. If, by the aid of the telescope, we bring the planets within the range of our observation, and by the microscope view particles too minute for the eye, unaided, to behold, we find them all pursuing the several objects of their creation, in accordance with the fixed plan of the Almighty.

"By Geometry we may curiously trace nature through her various windings to her most concealed recesses. By it we discover how the planets move in their respective orbits and demonstrate their various revolutions; by it we account for the return of the seasons and the variety of scenes which each season displays to the discerning eye; by it we discover the power, wisdom and goodness of the Grand Artificer of the Universe, and view with delight the proportions which connect the vast machine. Numberless worlds are around us, all framed by the same Divine Artist, which roll through the vast expanse and are all governed by the same unerring law of nature. Is there not more truth than fiction in the thought of the ancient philosopher, that God geometrizes continually?

"By geometry he rounds the dew drop; paints the pyramidal icicle that hangs from thatch-bound roof; bends into graceful curve the foaming cataract; paints His bow and beauty upon the canvas of a summer shower; assimilates the sugar to the diamond, and in the fissures of the earth-bound rocks, forms gorgeous caverns, thick-set with starry gems. By it He taught the bee to store its honey in prismatic cells; the wild goose to range her flight, and the noble eagle to heel and dart upon its prey, and the wakesome lark, God's earliest worshiper, to hymn its mating song in spiral flight. By it He forms the tender lens of the delicate eye, rounds the blushing cheek of beauty, curved the ruby lips and fashions the swelling breast that throbs in unison with a gushing heart. By it He paints the cheek of autumn's mellow fruit, forms in molds of graceful symmetry the gentle dove, marks the myriad circles on the peacock's gaudy train and decks the plumage of ten thousand warblers of His praise that animate the woody shade. By it He fashions the golden carp, decks the silvery

perch, forms all fish of every fin and tribe that course the majestic ocean, cut the placid lake or swim in gentle brook. Nay, more, even the glassy element in which they dwell, when by gentle zephyrs stirred, sends its chasing waves in graceful curves by God's own finger traced in parallel—above, beneath, around us, all the works of His hands, animate and inanimate, but prove that God geometrizes continually.

"But if man would witness the highest evidences of geometrical perfection, let him step out of the rude construction of his own hands and view the wide o'erspreading canopy of the stars, whether fixed as centers of vast systems or all noiselessly pursuing their geometrical paths in accordance with the never-changing laws of nature. Nay, more, the vast fields of illimitable space are all formed of an infinitude of circles traced by the compass of the Almighty Architect, whose every work is set by the Level, adjusted by the Plumb, and perfected by the Square. Do this, my brother, and you must admit with Plato, that God geometrizes continually, and be assured with Job, that He who stretcheth the earth upon emptiness and fixed the foundation thereof upon nothing, so it cannot be moved, can bind the sweet influence of Pleiades or loose the bonds of Orion."

When the city of Syracuse was sacked by the Romans, in 212 B. C., one of the greatest scientists and mathematicians of antiquity, Archimedes, was seen by a Roman soldier calmly seated on the ground in the market place, drawing mystical geometrical figures in the sand. Noticing the soldier's drawn sword, he is reputed to have exclaimed, "Don't disturb my circles," and calmly met the death meted to him by the enraged soldier.

We are informed that it was Archimedes, and not Pythagoras, who is credited with the exclamation, "Eureka!" The ruler of Syracuse desired to know whether the crown which a goldsmith had made for him was pure gold, and Archimedes pondered long over the question. In his bath one day he discovered the principles that a body displaces a quantity of water equal in bulk to itself, and that the loss of weight of the body immersed in water equals the weight of the water displaced. Excited by his discovery, the absent-minded philosopher leaped from his bath and ran through the streets crying "Eureka" (I have found it). In our ritual this expression has been attributed to Pythagoras.

The founder of one of the earliest schools of Greek philosophy, Thales, studied the geometry of the Egyptians and greatly improved its application by using it to measure the distance of ships at sea, the height of pyramids and in many other practical ways. Thales is reputed to have made the first attempt to get away from the mythological explanation of the universe. Pythagoras, the disciple of Thales, and the first to prove the theorem that the square of the hypotenuse

of a right-angled triangle is equal to the sum of the squares of the other two sides (47th problem of Euclid) went so far as to found a school of philosophy, which taught the principles of morality and great spiritual truths by mathematical symbols.

Philosophy literally means love of wisdom, and was undoubtedly so used by the early Greeks. Wisdom not only included the physical sciences but a broad knowledge of man's relationship to the universe. Thales' dictum, "Know Thyself," grew into the extensive moral philosophy of Pythagoras.

Jesus, who taught the purest moral philosophy, reduced the principles to their simplest forms and gave them to the common people. The more recondite phases have always been the study of the few.

That all the philosophers held geometry in high estimation is beyond question; and there is much to warrant a belief that it influenced much of their speculation on moral and spiritual phases of life. As we have risen in civilization it is regrettable that the moral and spiritual development has not received the same proportion of advancement as the mechanical and commercial. The word "geometry" today means little to the average man except as it applies to the physical universe. In Freemasonry we still retain its application to the higher phases of intellectual development.

The primitive man saw in the disk of the sun and the circle of the horizon circles which may have had a profound influence in his development of the qualities which produced the civilization of antiquity, of which the Greek has wielded the greatest influence.

The philosophers of these ancient civilizations found in geometric figures symbols of the deepest import regarding things human and Divine and the relationship toward each other.

Freemasonry is the custodian of all this Geometry, although only hints are given of its significance and its full comprehension can only be acquired by the industry and zeal which has actuated the lovers of wisdom in every age.

The point within a circle has unlimited possibilities as a symbol. As we contemplate, or try to contemplate the infinite universe, we realize the limitation of the human mind. Stars so distant that it takes light traveling 186,000 miles a second 220,000 years to reach the earth, baffles any comprehension of

space as we observe it. That is only a unit in the measurement of the universe (in fact no complete measurement is conceivable) gives us ample reason for using a circle to symbolize that infinity which words fail to express. If our limited faculties have such vague concepts of the physical universe, how much more limited are they respecting the spiritual, and how much need do we find for a symbol which will help us rationalize our crude mental pictures of infinity.

The triangle, or figure with three sides and three angles, has been used by man from time immemorial to symbolize the attributes of Deity which have appealed most strongly to his concepts. The origin and variations of the triangle would lead us into exhaustive studies to greatly enrich our knowledge. The study of comparative religion leads us to the fact that all the great religions have some trinity, either expressed or implied. The triangle is less comprehensive in its scope than the circle, but aids us greatly in viewing the manifestations of an incomprehensible whole.

The square, the most prominent and easily understood of the three most important geometrical figures, could never be constructed without a circle, it divides the circle into four equal parts. The law of the square is evident in spiritual, moral and physical realms. The circle, symbolizing infinity, includes infinite wisdom.

"And now, my Brother, having reached the summit of our symbolic stairway, let us pause a moment to consider the lesson of life which Masonry would teach us. The three steps represent the period of our life on earth, divided into three stages of infancy, manhood and age. The five steps our human faculties applied to the construction of material edifices symbolized by the five orders of architecture, while the seven steps represent the seven liberal arts and sciences, which symbolize the complete circle of human learning and the full development of man's soul. The winding stairway as a whole is a symbol of progress and instruction, teaching you that as a Mason you must not remain in the ignorance of irrational childhood, if you would be worthy of your vocation, but that your destiny as an immortal being requires you to ascend step by step, until you reach the summit, where the completed treasures of truth await you. The stairs are winding to represent the circuitous way by which we must go to investigate the many sides of truth. Masonry points the way, but you must travel the road yourself. Our symbolic stairway was easy for you to ascend, but the heights which you must climb in actual life will be hard to reach and the task is great; yet remember the reward will be magnificent; your wages will well repay the effort."—"The Middle Chamber", C. C. Hunt.)

## References:

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|---------------------------|-----------------------|
| Seven                     | Circle                |
| Liberal Arts and Sciences | Point Within a Circle |
| Grammar                   | Triangle              |
| Rhetoric                  | Square                |
| Logic                     | Square and Compasses  |
| Arithmetic                | Pythagoras            |
| Geometry                  | Pythagoras, School of |
| Music                     | Sun-worship           |
| Astronomy                 | Sun                   |
- Preston, Wm.