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NUMBERS

THEIR OCCULT POWER AND MYSTIC VIRTUES

PART I.

PYTHAGORAS, HIS TENETS AND HIS FOLLOWERS.

PYTHAGORAS, one of the greatest philosophers of ancient Europe, was the son of Mnesarchus, an engraver. He was born about the year 580 B.C., either at Samos, an island in the Aegean Sea, or, as some say, at Sidon in Phœnicia. Very little is known of his early life, beyond the fact that he won prizes for feats of agility at the Olympic Games. Having attained manhood, and feeling dissatisfied with the amount of knowledge to be gained at home, he left his native land, and spent many years in travel, visiting in turn most of the great centres of Learning. History narrates that his pilgrimage in search of wisdom extended to Egypt, Hindostan, Persia, Crete, and Palestine, and that he gathered from each country fresh stores of information, and succeeded in becoming well acquainted with the Esoteric Wisdom as well as with the popular exoteric knowledge of each.

He returned with his mind well stored and his judgment matured, to his home, intending to open there a College of learning, but this he found to be impracticable owing to the opposition of its turbulent ruler Polycrates. Failing in

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Part I. Pythagoras, his tenets and his followers (p. 11—15). Part II. Pythagorean views on numbers (p. 16—21). Part III. The Kabalah on numbers (p. 22—31). Part IV. Properties of the numbers according to the Bible, the Talmuds, the Pythagoreans, the Romans, Chaldeans, Egyptians, Hindoos, medieval Magicians, hermetic students and the Rosicrucians (p. 32—120).

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this design, he migrated to Crotona, a noted city in Magna Græcia, which was a colony founded by Dorians on the South coast of Italy. It was here that this ever-famous Philosopher founded his College or Society of Students, which became known all over the civilized world as the central assembly of the learned of Europe; and here it was in secret conclave that Pythagoras taught that occult wisdom which he had gathered from the Gymnosophists and Brahmins of India, from the Hierophants of Egypt, the Oracle of Delphi, the Idæan cave, and from the Kabalah of the Hebrew Rabbis and Chaldean Magi. For nearly forty years he taught his pupils, and exhibited his wonderful powers; but an end was put to his institution, and he himself was forced to flee from the city, owing to a conspiracy and rebellion which arose on account of a quarrel between the people of Crotona and the inhabitants of Sybaris: he succeeded in reaching Metapontum, where he is said to have died about the year 500 B.C.

Among the ancient authors from whom we derive our knowledge of the life and doctrines of Pythagoras and his successors, the following are notable:—

- B.C. 450.—Herodotus, who speaks of the mysteries of the Pythagoreans as similar to those of Orpheus.
- B.C. 394.—Archytas of Tarentum, who left a fragment upon Pythagorean Arithmetic.
- B.C. 380.—Theon of Smyrna.
- B.C. 370.—Philolaus. From three books of this author it is believed that Plato compiled his book *Timæus*; he was probably the first who committed to writing the doctrines of Pythagoras.
- B.C. 322.—Aristotle. Refer to his "*Metaphysica*," "*Moralia Magna*," and "*Nicomachean Ethics*." Nicomachus of Stagira was his father.
- B.C. 276.—Eratosthenes, author of a work entitled "*Kokkinon*" or "*Cribrum*," a "*Sieve to separate Prime from Composite Numbers*."
- B.C. 40.—Cicero. Refer to his works "*De Finibus*" and "*De natura Deorum*."

- 50 A.D.—Nicomachus of Gerasa; Treatises on Arithmetic and Harmony.
- 300 A.D.—Porphyry of Tyre, a great philosopher, sometimes named in Syriac, Melekh or King, was the pupil of Longinus and Plotinus.
- 340 A.D.—Jamblicus wrote "De mysteriis," "De vita Pythagorica," "The Arithmetic of Nicomachus of Gerasa," and "The Theological Properties of Numbers."
- 450 A.D.—Proclus, in his commentary on the "Works and Days" of Hesiod, gives information concerning the Pythagorean views of numbers.
- 560 A.D.—Simplicius of Cilicia, a contemporary of Justinian.
- 850 A.D.—Photius of Constantinople has left a Bibliotheca of the ideas of the older philosophers.

Coming down to more recent times, the following authors should be consulted:—Meursius, Johannes, 1620; Meibomius, Marcus, 1650; and Kircher, Athanasius, 1660. They collected and epitomized all that was extant of previous authors concerning the doctrines of the Pythagoreans. The first eminent follower of Pythagoras was Aristæus, who married Theano, the widow of his master: next followed Mnesarchus, the son of Pythagoras; and later Bulagoras, Tidas, and Diodorus the Aspendian. After the original school was dispersed, the chief instructors became Clinias and Philolaus at Heraclea; Theorides and Eurytus at Metapontum; and Archytas, the sage of Tarentum.

The school of Pythagoras had several peculiar characteristics. Every new member was obliged to pass a period of five years of contemplation in perfect silence; the members held everything in common, and rejected animal food; they were believers in the doctrine of metempsychosis, and were inspired with an ardent and implicit faith in their founder and teacher. So much did the element of faith enter into their training, that "*autos epha*"—"He said it"—was to them complete proof. Intense fraternal affection between the pupils was also a marked feature of the school; hence their

saying, "my friend is my other self," has become a by-word to this day. The teaching was in a great measure secret, and certain studies and knowledge were allotted to each class and grade of instruction: merit and ability alone sufficed to enable anyone to pass to the higher classes and to a knowledge of the more recondite mysteries. No person was permitted to commit to writing any tenet, or secret doctrine, and, so far as is known, no pupil ever broke the rule until after his death and the dispersion of the school.

We are thus entirely dependent on the scraps of information which have been handed down to us from his successors, and from his and their critics. A considerable amount of uncertainty, therefore, is inseparable from any consideration of the real doctrines of Pythagoras himself, but we are on surer ground when we investigate the opinions of his followers.

It is recorded that his instruction to his followers was formulated into two great divisions—the science of numbers and the theory of magnitude. The former division included two branches, arithmetic and musical harmony; the latter was further subdivided into the consideration of magnitude at rest—geometry, and magnitude in motion—astronomy.

The most striking peculiarities of his doctrines are dependent on the mathematical conceptions, numerical ideas, and impersonations upon which his philosophy was founded.

The principles governing Numbers were supposed to be the principles of all Real Existences; and as Numbers are the primary constituents of Mathematical Quantities, and at the same time present many analogies to various realities, it was further inferred that the elements of Numbers were the elements of Realities. To Pythagoras himself it is believed that the natives of Europe owe the first teaching of the properties of Numbers, of the principles of music, and of physics; but there is evidence that he had visited Central Asia, and there had acquired the mathematical ideas which form the basis of his doctrine. The modes of thought introduced by Pythagoras, and followed by his successor Jamblicus and others, became known later on

by the titles of the "Italian school," or the "Doric school."

The followers of Pythagoras delivered their knowledge to pupils, fitted by selection and by training to receive it, in secret ; but to others by numerical and mathematical names and notions. Hence they called forms, numbers ; a point, the monad ; a line, the dyad ; a superficies, the triad ; and a solid, the tetrad.

Intuitive knowledge was referred to the Monad type.

Reason and causation ,, ,, Dyad type.

Imagination (form or rupa) ,, ,, Triad type.

Sensation of material objects ,, ,, Tetrad type.

Indeed, they referred every object, planet, man, idea and essence to some number or other, in a way which to most moderns must seem curious and mystical in the highest degree.

"The numerals of Pythagoras," says Porphyry, who lived about 300 A.D., "were hieroglyphic symbols, by means whereof he explained all ideas concerning the nature of things," and the same method of explaining the secrets of nature is once again being insisted upon in the new revelation of the "Secret Doctrine," by H. P. Blavatsky.

"Numbers are a key to the ancient views of cosmogony—in its broad sense, spiritually as well as physically considered, and to the evolution of the present human race ; all systems of religious mysticism are based upon numerals. The sacredness of numbers begins with the Great First Cause, the One, and ends only with the nought or zero—symbol of the infinite and boundless universe." "Isis Unveiled," vol. ii. 407.

Tradition narrates that the students of the Pythagorean school, at first classed as Exoterici or Auscultantes, listeners, were privileged to rise by merit and ability to the higher grades of Genuini, Perfecti, Mathematici or the most coveted title of Esoterici.

PART II.

PYTHAGOREAN VIEWS ON NUMBERS.

THE foundation of Pythagorean Mathematics was as follows :

The first natural division of Numbers is into EVEN and ODD, an EVEN number being one which is divisible into two equal parts, without leaving a monad between them. The ODD number, when divided into two equal parts, leaves the monad in the middle between the parts.

All even numbers also (except the dyad—two—which is simply two unities) may be divided into two equal parts, and also into two unequal parts, yet so that in neither division will either parity be mingled with imparity, nor imparity with parity. The binary number two cannot be divided into two unequal parts.

Thus 10 divides into 5 and 5, equal parts, also into 3 and 7, both imparities, and into 6 and 4, both parities ; and 8 divides into 4 and 4, equals and parities, and into 5 and 3, both imparities.

But the ODD number is only divisible into uneven parts, and one part is also a parity and the other part an imparity ; thus 7 into 4 and 3, or 5 and 2, in both cases unequal, and odd and even.

The ancients also remarked the monad to be “odd,” and to be the *first* “odd number,” because it cannot be divided into two equal numbers. Another reason they saw was that the monad, added to an even number, became an odd number, but if evens are added to evens the result is an even number.

Aristotle, in his Pythagoric treatise, remarks that the monad partakes also of the nature of the even number, because when added to the odd it makes the even, and added to the even the odd is formed.

Hence it is called "evenly odd." Archytas of Tarentum was of the same opinion.

The Monad, then, is the first idea of the odd number ; and so the Pythagoreans speak of the "two" as the "first idea of the indefinite dyad," and attribute the number 2 to that which is indefinite, unknown, and inordinate in the world ; just as they adapt the monad to all that is definite and orderly. They noted also that in the series of numbers from unity, the terms are increased each by the monad once added, and so their ratios to each other are lessened ; thus 2 is $1 + 1$, or double its predecessor ; 3 is not double 2, but 2 and the monad, sesquialter ; 4 to 3 is 3 and the monad, and the ratio is sesquitercian ; the sesquiquintan 6 to 5 is less also than its forerunner, the sesquiquartan 5 and 4, and so on through the series.

They also noted that every number is one half of the total of the numbers about it, in the natural series ; thus 5 is half of 6 and 4. And also of the sum of the numbers again above and below this pair ; thus 5 is also half of 7 and 3, and so on till unity is reached ; for the monad alone has not two terms, one below and one above ; it has one above it only, and hence it is said to be the "source of all multitude."

"Evenly even" is another term applied anciently to one sort of even numbers. Such are those which divide into two equal parts, and each part divides evenly, and the even division is continued until unity is reached ; such a number is 64. These numbers form a series, in a duple ratio from unity ; thus 1, 2, 4, 8, 16, 32. "Evenly odd," applied to an even number, points out that like 6, 10, 14, and 28, when divided into two equal parts, these are found to be indivisible into equal parts. A series of these numbers is formed by doubling the items of a series of odd numbers, thus :

1, 3, 5, 7, 9 produce 2, 6, 10, 14, 18.

Unevenly even numbers may be parted into two equal divisions, and these parts again equally divided, but the process does not proceed until unity is reached ; such numbers are 24 and 28.

Odd numbers also are susceptible of being looked upon from three points of view, thus :

“First and incomposite” ; such are 3, 5, 7, 11, 13, 19, 23, 29, 31 ; no other number measures them but unity ; they are not composed of other numbers, but are generated from unity alone.

“Second and composite” are indeed “odd,” but contain and are composed from other numbers ; such are 9, 15, 21, 25, 27, 33, and 39. These have parts which are denominated from a foreign number, or word, as well as proper unity, thus 9 has a third part which is 3 ; 15 has a third part which is 5 ; and a fifth part 3 ; hence as containing a foreign part, it is called second, and as containing a divisibility, it is composite.

The Third Variety of odd numbers is more complex, and is of itself second and composite, but with reference to another is first and incomposite ; such are 9 and 25. These are divisible, each of them that is second and composite, yet have no common measure ; thus 3 which divides the 9 does not divide the 25.

Odd numbers are sorted out into these three classes by a device, called the “Sieve of Eratosthenes,” which is of too complex a nature to form part of a monograph so discursive as this must be.

Even numbers have also been divided by the ancient sages into Perfect, Deficient and Superabundant.

Superperfect or Superabundant are such as 12 and 24.

Deficient are such as 8 and 14.

Perfect are such as 6 and 28 ; equal to the number of their parts ; as 28—half is 14, a fourth is 7, a seventh is 4, a fourteenth part is 2, and the twenty-eighth is 1, which quotients added together are 28.

In Deficient numbers, such as 14, the parts are surpassed

by the whole: one seventh is 2, a half is 7, a fourteenth is 1; the aggregate is 10, or less than 14.

In Superabundant, as 12, the whole surpasses the aggregate of its parts; thus the sixth is 2, a fourth is 3, a third is 4, a half is 6, and a twelfth is 1; and the aggregate is 16, or more than 12.

Superperfect numbers they looked on as similar to Briareus, the hundred-handed giant: his parts were too numerous; the deficient numbers resembled Cyclops, who had but one eye; whilst the perfect numbers have the temperament of a middle limit, and are the emulators of Virtue, a medium between excess and defect, not the summit, as some ancients falsely thought.

Evil is indeed opposed to evil, but both to one good. Good, however, is never opposed to good, but to two evils.

The Perfect numbers are also like the virtues, few in number; whilst the other two classes are like the vices—numerous, inordinate, and indefinite.

There is but one perfect number between 1 and 10, that is 6; only one between 10 and 100, that is 28; only one between 100 and 1000, that is 496; and between 1000 and 10,000 only one, that is 8128.

Odd numbers they called Gnomons, because, being added to squares, they keep the same figures as in Geometry: see Simplicius, liber 3.

A number which is formed by the multiplication of an odd and an even number together they called Hermaphrodite, or "arrenothelus."

In connection with these notes on parity and imparity, definite and indefinite numbers, it is to be noted that the old philosophers were deeply imbued with the union of numerical ideas with Nature—in its common acceptation, and also to the natures, essences or substrata of things.

The nature of good to them was definite, that of evil indefinite; and the more indefinite the nature of the evil, the worse it was. Goodness alone can define or bound the indefinite. In the human soul exists a certain vestige of

divine goodness (Buddhi); this bounds and moderates the indefiniteness and inequality of its desires.

It may be demonstrated that all inequality arises from equality, so that obtaining, as it were, the power of a mother and a root, she pours forth with exuberant fertility all sorts of inequality; and did space and time allow, it could be also shown that all inequality may be reduced to equality.

Iamblichus, in his treatise on the Arithmetic of Nicomachus, throws another light on numbers; he says some are like friends, they are Amicable numbers, as 284 and 220.

Pythagoras, being asked what a friend was, said ἑτερος εἷς = "another I." Now this is demonstrated to be the case in these numbers; the parts of each are generative of each other, according to the nature of friendship.

Ozanam, a French mathematician, A.D. 1710, gives examples in his "Mathematical Recreations" of such Amicable Numbers. He remarks that 220 is equal to the sum of the aliquot parts of 284; thus $1 + 2 + 4 + 71 + 142 = 220$: and 284 is equal to the sum of the aliquot parts of 220; thus $1 + 2 + 4 + 5 + 10 + 11 + 20 + 22 + 44 + 55 + 110 = 284$.

Another such pair of numbers are 17,296 and 18,416.

Very curious speculations as to the relation between Numbers and marriage, and the character of offspring from it, are to be found scattered through the writings of the Philosophers. Plato, in his "Republic," has a passage concerning a geometric number, which, divinely generated, will be fortunate or unfortunate. Nicomachus also speaks of this same number, and he calls it the Nuptial Number; and he passes from it to state that from two good parents only good offspring can come; from two bad parents only bad; and from a good and a bad parent only bad; whence he warns the Republic against wedlock in a confused or disorderly manner, from which, the progeny being depraved, discord will result. Simplicius, in his commentary on the 2nd Book of Aristotle, "On the Heavens," remarks that Pythagoras and his followers claimed to have heard the Music of the Spheres, to have heard an harmonic sound produced by the motion of the planets, and from the sound

to have calculated by numbers the ratio of distance and size of the Sun, Moon, Venus and Mercury. To this Aristotle objected, but perhaps the difficulty might be solved: in this sublunary sphere all things are not commensurate, nor is everything sensible to every body alike. Animals can be scented, and their presence definitely known, by dogs when at great distances from them, and when man is in complete ignorance of their existence. Some of the ancients thought the soul had three vehicles—the terrestrial body, an aerial one in which it is punished, and an ethereal one, luminous and celestial, in which the soul abides when in a state of bliss. It may be that some one, by purification of the senses, by hereditary magical power, or by probity, or by the sacred operations of his religion, may perceive, with a terrestrial body laid aside, things imperceptible to us, and hear sounds inaudible to us still in bondage; or with mantle partly unfolded, some adept or truth-seeker may perceive, with eyes upraised, sights invisible to mortals, whilst yet his ears are deaf to the sounds beyond us both. For why do we see the stars, while yet we hear not their motion:

Why come not angels from the realms of glory
 To visit earth, as in the days of old?
 Is heaven more distant
 Or has earth grown cold?