

SPECIAL COURSES OF INSTRUCTION: OCCULT MATHEMATICS

Series One, Lesson One: Introduction

Statement of Purposes of Course

Today, equally with other domains of life, thought is being subjected to a transitional development in a peculiar sense. Concepts are becoming widened and deepened in their meaning. That which once was regarded as the vagaries of the irresponsible mystic is gradually unfolding to us as being just as much the ordered expression of Law as the most commonplace elements of the mundane world. The mental life which once moved within the data afforded through the avenues of our grosser senses only is becoming widened through the advent of new material afforded through the awakening of more sensitive and refined avenues of perception. So we see Reason marching forth with her great and highly trained armies and, in a successful war of conquest, extending far her boundaries into the unsurveyed domains of the unreasonable. In a word, evolutionary processes are not confined to the world of things, leaving Mind eternally unchanged, moving through static, preordained forms, but they include this mental stuff equally with the rest as coming under the sway of their action. Manifested mind as a part of Life is subject to the process of mutation by which all Life is bound.

Some understanding of the fact of the evolution of conceptual processes is necessary for comprehending in some degree the nature and meaning of the Occult Sciences. If Mind were to be regarded as ever fixed in its forms then the Occult must always remain an incomprehensible mystery and "Occult Science" a contradiction in terms. For the Occult is that which is transcendental, and if the transcendental were merely a static, detached something, entirely independent of finite life, then it would have no meaning for that life. But if it stands as something ever beyond, yet ever flowing into the finite, it becomes the guiding star which gives meaning to all finite processes. Evolution is the flowing into the finite of that which lies beyond. So, to evolving Mind, the Occult does not stand as the eternally incomprehensible, but rather as that which is coming to birth out of the Darkness into the Light. Occult Science exists by reason of the fact that not all expressions of Mind are equally far evolved. The vanguard in the moving army of human intelligences has delved deeper into the mysteries of Nature than the rest, and has organized its systems of knowledge accordingly. What it has formulated the rest of mankind can comprehend when they approach the levels of expanded consciousness the former occupies. As sciences touching aspects of Nature transcending the comprehension of any given portion of Humanity, these formulations are Occult. But as being the ordered forms built by Intelligences sufficiently far evolved to understand, they are Sciences.

In general, then, the Occult is that which lies beyond the range of comprehension of some portion of manifested Being, but in particular it is that which lies beyond the grasp of humanity *en masse*. At any given stage of humanity's development there are those mysteries which are the but partially comprehended elements that are entering within the range of human comprehension, but which later become the commonplace material with which man works. At this latter point the Occult becomes the apparently unmysterious experiential forms of daily life. It is all merely a growth in man's range of consciousness. Again, as man goes on and that which he has acquired has

become more and more common, once more it is lost in another domain of the Occult, i.e., the subconscious. So the moving consciousness of any portion of mankind is like a wave which is spreading in an ever extending circle on the Ocean of Being, raising into manifestation upon its crest ever wider mysteries from out the Depths, and laying behind itself within its own depths that which it has manifested and mastered.

There is no department of life which has the distinction of possessing no occult aspect. In all things there is an undiscovered wealth and a wealth that has been so thoroughly exploited that it is forgotten. In that short span of time which, for practical purposes, we call the Present, all things appear in some measure in the Light but with the branches of their full expression lost in the darkness of the unknown Future, and with the roots of their beginnings equally well eclipsed in the approaching darkness of the forgotten Past. Or, to use another figure, we contact in our outer consciousness only a cross-section, a three-dimensional cross-section, of realities which if truly seen would be found possessing four or more dimensions. The ordinary exoteric knowledge is knowledge only of that cross-section of things. The underlying roots and the fruit-bearing branches lie beyond the range of this process of comprehension.

As with other things, mathematics has its exoteric and esoteric aspects. Exoteric mathematics deals only with logical manipulations of certain formal relationships, and even in this it is not wholly exoteric. Nearly all who have persistently delved into the mysteries of mathematics have sooner or later found a point beyond which they cannot pass. Some have blazed trails into unexplored regions where not until long afterwards were others able to follow. Within the past few years a certain mathematician has passed away of whom it was said that some of his works no others were able to understand. The horizon of understanding of these others had not yet grown wide enough for them to follow. Yet all of this is purely within the field of logical manipulations. Of other than formal aspects of mathematical elements and operations almost nothing is known in the exoteric world. The existence of inner meanings is hardly suspected, much less are they consciously applied. Yet the Occult Mathematician says that upon the formal elements and operation of mathematics there are inner dimensions that give meaning, so that mathematics fully known is not a thin schematism, but a thick view of the world in all its expression as LAW.

It is the purpose of this course of studies to delve into and bring into the Light some of the hidden meanings of Number, Geometrical Form and Connective Operations. We do not hope to do more than just to scratch the surface of these inner aspects, but we hope that in so doing some small portion of the consciousness of our human whole may be helped to seek expansion in the inner realms of the great and beautiful world of mathematics. We do not claim to give anything in the nature of interpretation that may not be changed in a greater or less degree under the brighter Light of a more thorough understanding. That which is offered is given simply as suggestions for deeper delvings.

Character of Mathematical Knowledge

In connection with a discussion of the method of study whereby man may come to an understanding of the Laws of Nature, H. P. Blavatsky made the following statement:

. . . to arrive at the macrocosmical, you must begin with the microcosmical, i.e., you must study MAN, the microcosm--in this case as physical science does--inductively, proceeding

from particulars to universals. At the same time, however, since a key-note is required to analyze and comprehend any combination of differentiations of sound, we must never lose sight of the Platonic method, which starts with one general view of all, and descends from the universal to the individual. This is the method adopted in Mathematics--the only exact science that exists in our day.*

As is indicated in this quotation there are two methods by which man acquires knowledge. One is the method of induction or the formulation of general laws out of an observation of and meditation upon specific instances. This is the peculiar method of the empirical sciences. The other method is that of deduction or the proceeding from universals or general principles to particular applications. This process is also used in all the sciences in instances where an already formulated law has a particular application, but it is the method of mathematics *par excellence*.

Now these two modes of acquiring knowledge correspond to the two major aspects in the nature of Man, i.e., Man under the aspect of multiple personal forms on the objective planes of Being, and secondly, as one with the Divine Center of Being. Under the first aspect Man acquires knowledge through his senses by the principles of contact with a multiplicity of special things. If man moved under this mode alone he could never know anything but concrete isolated facts without any notion whatever of synthesizing laws. Indeed, strictly speaking, he could not even know individual facts, for the perception of a single fact alone requires a context or background of understanding to give it form. But for the purpose of interpretation we may imagine the consciousness of this aspect of Man as being a sensing of a mass of discrete things without any order among them. For example, the rising of the sun would be sensed without any memory of its having risen before and without any expectation of its rising again. It would be a consciousness moving in the midst of multiplicity without even so much of the unifying capacity as to recognize that it was a multiplicity. On the other hand, if Man moved only under the aspect of his oneness with the Divine Center of Being his consciousness would be simply that of an undifferentiated and endless unity. Things would not exist for him. In fact, he would be so perfectly unified that he would not have a sufficient awareness of multiplicity to realize that he was One with God.

The manifestation of Man depends upon the interaction of the two aspects of his nature just analyzed. Actually he could not exist under one aspect or the other alone. However, one or the other of these aspects may be predominant in certain individuals, and probably are so at some time in the experience of all individuals. Consequently, it is possible to analyze the peculiarities of these two modes and determine what each contributes to the life of man. Now Man under his aspect of multiple personal forms makes contact with things and thus acquires what may be called the material filling of his nature. Under the aspect of unity with the Divine Center of Being, he brings into his nature the principle of organization or unification which gives form to the material filling acquired through the diversified personalities. The ultimate result of this dual process is Man objectified, yet in conscious unity with the Universal Whole.

Now the knowledge which comes to Man through his objective multiple aspect ever carries the mark of tentativity. It does not give certainty, but only probable truth. Through it is born error and illusion when uncorrected by the knowledge which is derived through the other mode of Man's nature. This is the type of knowledge of the objective consciousness. In contradistinction there is

* H. P. Blavatsky, *The Secret Doctrine* III (Chicago, Ill.: Theosophical Book Concern, 1897), 437.

the knowledge of principle or Universal Law, belonging to the other mode, which gives absolutely certain truth. But in its turn it is generally limited by being unable to give itself expression. Being precipitated into the world of material things it loses its natal purity, becomes corrupted and thus, to a greater or less degree, fails to reveal itself truly. This is the type of knowledge which often is known as Soul Knowledge. The marriage of these two so that objective knowledge may lose its tentative nature and Soul Knowledge may win objective expression is a large part of the great task of Life.

An estimable help toward the realization of this goal may be secured by holding the consciousness especially open to those forms of knowledge which carry the mark of universality and certainty welling up from Within. For such is out of Soul Knowledge which has most successfully bridged the gap between the unified Inner and the multiform Outer Worlds.

Of all knowledge which has the perfection of form which gives it the right to the title of “science,” mathematics stands alone in this age in possessing the exactness which marks knowledge from universals. With adumbrations of such knowledge, there are many that have found their vehicle of partial expression in art and mystical literature, but such are only foretastes of that which will be the manifested exact knowledge of a future age, or perhaps remembrances from the certainties outwardly expressed in the past. But that which peculiarly carries the mark of the certainty which characterizes Soul Knowledge on this outer plane of manifestation is mathematics.

We see, then, in so far as it is revealed in mathematics, the expression of Soul in outer form, not merely as an adumbration or foretaste of a future realization, but as an expression of the Eternal in some degree realized perfectly on this plane of Being.

Metaphysical Problem of Occult Mathematics

Very early philosophy made a division of the raw material of experience into two categories, i.e., subject and object, or consciousness and matter. It was recognized that experience did not consist merely in things known, but that there existed as an unavoidable factor in experience, the Knower, in relation to which the “Known” stood in undetermined, but nonetheless inseverable bonds. For centuries, even, the problem of the nature of this relationship has been one of the most central in exoteric philosophy. Certain laws governing the sequence and formation of states of consciousness were recognized, and equally well a number of laws governing the action and composition of the material concomitants of those states of consciousness. But these laws seemed to form two distinct series, one governing the life of the Subject, the other the processes of the Object. It was realized as a fundamental fact that these two series inhered in some basic unity, but touching the nature of that inherence there has been a vast variety of hypotheses offered, each satisfactory for the explanation of certain of the difficulties of the problem, but each also failing to meet all of the requirements which a complete solution demanded.

Now, one of the most important offerings which Occult Philosophy has made to metaphysical thought lies in the contribution which it makes to the problem of the nature of the inherence binding the subject and the object. Of course, no statement of an Occultist, however high, can place this problem in the class of the “solved once for all.” For, manifestly a problem that has been so persistent in the thought-life of the race, as the one under consideration has been, must involve elements which lie so deep in the nature of things that the completely satisfactory solution may be only approached as deeper and deeper layers of the outer consciousness unfold. The

statement of “One who Knew” could only serve to guide the struggling human consciousness a step farther, it could not graft within the imperfectly awakened mind the perfect understanding of its author. So it is with no thought of discrediting the absolute perfection of Occult Science and Philosophy in its ultimate form that we say that Occultism has made an important contribution towards a solution, rather than a final solution of a problem. It is, then, as a further contribution to the domain of manifested Thought that we shall consider what Occultism has to offer for the problem in question.

Instead of the usual two-fold division of the substance of experience into Matter and Consciousness, Occult Philosophy makes a three-fold division into Matter, Force and Consciousness. That is, in addition to the elements already recognized in exoteric thought It has added a third and intermediate factor designated “Force” (not to be understood as having the same connotation as that term in Physics). Now this term carries a mysterious meaning which has unfolded only in a small measure in our consciousness. This much we can say, it carries the meaning of the transitional factor in Nature. It is that Power which causes a transference from one plane of Being to another within the Universe. Its function is one that is very illusive when we seek to comprehend it, for it plays the part of moving everything out of any category in which it may be placed. But by this very power of transcending categories, it unifies. It crosses the boundaries that separate the forms of consciousness and things, and, by bridging the separating gulfs, unites the segregated. It is the road by which Consciousness or Spirit flows into the Object or Matter, and by which the latter returns to the former. As has been said, a mysterious conception, yet one fraught with great possibilities in giving to our expanding human consciousness a thread with which may be woven a band of union, by which may be bound together the multiplicity and the unity of things.

The foregoing digression into general metaphysical subject-matter has been for the distinct purpose of more accurately defining the domain of mathematics. The obvious function of mathematics is that of laying down the rigid schematism of the Universe. She sets the formal bounds outside of which there can be no expansion. She is the immovable structure *par excellence* which opposes the plastic yet holds it within her all-encompassing embrace. But how can that which is the quintessence of static perfection be united with anything so mobile, so changing and ever-translating as Life? Here, again we face the problem of bridging the trenches between antagonistic categories and uniting the enemies into coordinated constructors. And it is here that the principle of “Force” or the transitional factor enters in. Through Force changeless perfection plays into the world of Becoming. How is this done? The answering of this question is the great problem of Occult Mathematics. Let those who are interested delve with us into the studies that follow and help to draw understanding from out of the transcendental.

Questions on Occult Mathematics: Series One, Lesson One

1. What is meant by the evolution of Mind?
2. Give the meaning of (a) the term “Science”; (b) the term “Occult.” Why may we speak of an “Occult Science”?
3. Distinguish between the two domains of the Occult.
4. With what does exoteric mathematics deal?
5. Define and illustrate “Induction” and “Deduction.”
6. Name and give the powers and limitations of the two aspects of man’s nature.
7. What is the peculiar characteristic of mathematical knowledge?
8. What division of the raw material of experience has exoteric philosophy made?
9. Give the peculiar contribution of Occult Philosophy to this division and point out its importance.
10. What is the great problem of Occult Mathematics?

(Write out the answers to the foregoing questions.)

SPECIAL COURSES OF INSTRUCTION: OCCULT MATHEMATICS

Series One, Lesson Two: Mathematical Subject-Matter

In these studies we must be careful to bear in mind the three-fold nature of things in its application to mathematical entities and operations. On one side mathematics corresponds to a certain state of consciousness. The mathematical consciousness is the apprehension of the Universe under the special form of inexorable and impersonal Law. But mathematics has a material or objective form of expression as well. This objective form consists of all that can be spoken of as mathematical entities and operations or, in general, mathematical subject-matter. Finally, there is the subtle and but little comprehended aspect of mathematics which may be called “force.” It may be said that this aspect embraces the dynamic power of mathematical forms.

As was stated in the preceding lesson, the central problem of this course of study will be that of unraveling, so far as possible, the meaning and power of mathematical forms when viewed under the aspect of Force. We shall ask the question: What is the transcendental power and meaning inhering in such and such a number or geometrical form? Then by a process of analysis and correlation we shall seek to remove some portion of the veil that hides the deeper aspects of our common numerical and geometrical forms. This work is largely pioneering and consequently the methods of procedure are mostly not established but must be evolved out of the problem itself. For a starting point we take the material that has already been established by the work of general mathematicians, and then locating our base of supplies in that known and surveyed land, we shall make our journeys of exploration into the unknown from that point.

The Consciousness and Force aspects of the Universe, *qua* Consciousness and Force, cannot be contemplated. It is true that analysis may pick them out as moments in the concrete totality of experience. But when so picked out they cease to be Consciousness and Force and become merely the unknown ‘x’ and ‘y’ that form inherent but unseen inner dimensions of the material basis of experience. We can detect and may discuss certain penumbral forms shading off from the central object of experience, but they are forms and forms only that we are discussing, no matter how subtle they may be. The Essence, which is Consciousness, and the Medium between the Essence and the Form, which is Force, can never be truly objects of Consciousness as they are *not objects*. So at best we can do no more than lift a veil or two to view the subtler dimensions of things. The ultimate veil can never be lifted until Consciousness attains that exalted level where all manifestation is transcended.

As is true of all aspects of the Universe, Mathematics, as something which we may contemplate, is a Thing or series of things. Accordingly, our first task will be to outline the general subject-matter of mathematics.

Mathematics deals solely with relationships. Therefore, it is said that mathematical truth is hypothetical, not categorical. For instance, if we assume the general relationships subsumed under the definition of Space given in Euclidian geometry, we must say, among other things, if we have a triangle then the sum of the interior angles is equal to two right angles. Now in this proposition the purely mathematical quality is bound up in the two words “if” and “then.” If such and such is the case, then so and so must follow. Strictly speaking it is not a mathematical fact that triangles exist. Propositions such as “Triangles exist” or “Triangles do not exist” are categorical and pure mathematics has nothing to do with them. Mathematics has simply to do with the fact that if

triangles exist then such and such relationships hold between the various parts of such triangles. That is why mathematical truth is called hypothetical. However, there is a plane upon which the truths of mathematics are categorical and absolute. That plane is the plane of the relationships between the “ifs” and the “thens.” Ultimately reduced, the relationships stand as original and irresolvable data. They are unprovable but simply are immediately apprehended facts. Their truth is patent on the face of them and is unquestioned by all whose power of apprehension is sufficiently awakened to be aware of them. It is this quality of absolute, though unproven, certainty that marks mathematical knowledge as soul knowledge when reduced to ultimate principles.

On the plane of its categorical form mathematics transcends the grasp of the human mind in its present stage of unfoldment. It can be comprehended only as it is used in operating upon more tangible and grosser material forms. On the higher plane it is known as an unseen something that must be. It is known that it must be through the Truth perceiving power of the soul, but from the standpoint of our outer manifested consciousness it is an unseen something. Thus in our manipulation of mathematics we are conscious of it as certain but hypothetical truth.

In our use of it mathematics deals with five kinds of relationships. These are, Spatial, Temporal, Numerical and Logical relationships and relationships between Operations. These we will give a very brief general consideration in the order named.

Spatial Relations

“The nature of Space” constitutes one of the classical problems of Metaphysics upon which nearly every philosopher has meditated and made his own special contribution. Among these, the one that has stood out in most prominence in the modern philosophical period is that offered by Immanuel Kant, and as, in our opinion, the conception of this philosopher comes the closest to representing the standpoint of Occult Philosophy of any contribution of a prominent thinker in the Western World, we will state very briefly his concept of Space.

The naive conception of Space of the ordinary man is that of a something which most completely of all things stands outside his subjective life, and which is real and unchangeable. Opposed to this, the Kantian conception maintains that space is a subjectively imposed form of experience that makes possible the coordination of simultaneity and diversity of things and also of identity of Thing with diversity of position or external relationship. But when we say “a subjectively imposed form” it is not meant that space is builded arbitrarily at the behest of the personal will of the individual. It is rather a condition imposed by the Universal Soul under which all personal reflections of that Soul move and have their being. From the standpoint of the personal ego, Space is an objective discovery, but from that of the Universal Ego it is a creation. Or, to speak in Occult terms, Space is the Robe or Screen which the Universal Ego, or God, sends forth and upon which He is informed and reflected to Himself. In other words, Space is the ultimate *noumenon* of Matter, or Matter in that form where its oneness with Spirit is most immediate.

Occultism has spoken of Space as an illusion. What does this mean? Does it mean that Space is non-existent? No. On the plane of the personal self Space is an objective discovery and an irresolvable fact. It is real in the sense of being the necessary condition of the manifestation of all those relationships which we know as “spatial relationships.” But it is an illusion when understood as possessing a greater substantiality than could inhere in the creative emanation of the Universal Self. Though of all things that man contacts, it seems to be the most objective and most

independent, yet actually it is only relatively independent. In reality it stands merely as a first creative act of God.

When speaking of Space as a creative act of God it is easy to fall into the error of regarding it as a spontaneous and free creation independent of all pattern. It is not so. Space is a modifier of God as well as God's creation. While it is true that Space is not confined to one kind alone, yet it must be a space of one kind or another. In other words, Space is builded according to a pattern of inexorable Law, and God does not stand outside that Law but is that Law and is modified by it. The law of a space consists of the manifold of relationships that subsists within it.

We have said that Space is not restricted to one form alone. This statement may seem very strange to one unfamiliar with developments in modern Geometry. But it is a fact that we know the laws of inter-relationships holding within several forms of Space, and there is no interior evidence in any one of these forms that makes it stand out as the true Space. For instance, both occult and exoteric students have heard of a four-dimensional space. Some mathematical investigations of this space have been instigated and certain properties discovered and formulated. Now from the purely mathematical point of view there is no basis of predicating the reality or unreality of this form of Space as a possible perceptual fact. The fact that in the testimony from general experience there is no recognition of such a perceptual realization in no wise discredits its possibility. For no number of failures to experience a logical possibility can disprove that possibility, provided any of the conditions of such an experience specified in the logical statement have not been met. Thus the notion of more than one possible form of space is quite compatible with extant human knowledge.

It is evident, then, that the spatial creations of God may be diversified. But, however diversified they may be, they are not free creations. Each space is defined by certain laws that make it that space and no other space, and the aspect of Deity reflected through that form of Space would be unavoidably modified by its laws. And further, the restriction of Deity by the spatial form He has created is not a restriction that simply comes into being at the moment of creation. It is not true that God is free to choose out of a number of possible forms that one by which He will be bound for a season, but from which He was perfectly free before choice. Behind all forms of Space there is the abstract, primal Space, the laws of which are the ultimate inexorable laws by which even the Absolute is bound in His spatial manifestation. This Space makes up the ever invisible Robes that infold the Eternal Parent, manifested or in rest. It is a Space without dimension in every sense.* It is Space compressed in the point of infinite dimensionality, or of unlimited number of dimensions. It is the vehicle of the highest God whether concentrated in potentially complete expression or expanded in the endless unseen.

The laws of this ultimate Space make up the *noumenon* of all geometries. This ultimate Geometry is the Absolute in form.

There is, then, only one Absolute Geometry, and that is unmanifested. Under this absolute Geometry there are many concrete geometries corresponding to all particular forms of Space. In the strictly mathematical sense any one of these geometries is equally true with any other. In practical usage the determination of the form of geometry which constitutes the true measurement of our particular type of Space involves more than the use of purely mathematical considerations. For instance, there are in existence at least two forms of extra-ordinary geometries which, theoretically, can be employed for the measurement and formulation of our Space just as well as Euclidian

*See H. P. Blavatsky, *The Secret Doctrine* I (Adyar: Theosophical Publishing Co.), 61.

geometry. But the application of these would involve much greater complexities in physical and engineering problems than is the case with the better known geometry. Exoterically, then, it is a consideration of simplicity--an extra-mathematical matter--that has determined which geometry stands in practice.

We have just spoken of simplicity as an exoteric test. But is it only an exoteric test? Do we not, perhaps, find in true simplicity the pointing finger of God to that which is true for us? Is not simplicity the concordant harmony formed by man's striking the tone in right relationship to the tone of the Divine Chord that enters into his consciousness? If so, then in simplicity we have an occult test of truth as well as an external practical one. Thus would we have reason to believe that Euclidian geometry is of most immediate occult significance to us.

Temporal Relations

Time is a mystery scarcely second in interest to that of Space. As with Space we shall follow the Kantian philosophy and interpret Time as a subjectively imposed form of experience. Like Space, Time is an illusion in its appearance to us as an external unchanging form. It is real as a form through which the Ego makes its transit on the Road of Unfolding Consciousness. It is the Rope which binds the heights to the depths in Manifested Being. In one sense, Time alone lies between God and the Devil. Through Time all things enter into all things. Thus is Time the peculiar vehicle of Force, the translator of all that is.

Mathematically considered, Time is a kind of Space. The formal properties of Time are the same as those of a line or a Space of one dimension. The relationships of order that exist between points on a line and between instants of Time are identical. So in kinematics, where Time enters as an element, it is regarded as a straight line, and behaves very much as a fourth dimension added to the three dimensions of ordinary Space. In fact, when occultly considered, it is possible that Time may prove to be the form that the Fourth dimension assumes when translated into the three dimensional consciousness. If so, he who is fully awakened in four-dimensional consciousness would know at once of our three dimensioned plane, all that is, has been and will be. This, we are told, is the experience of those souls whose consciousness has expanded to four dimensions. May we not find here a new correlation? If so, a new Light is ours.

We have said that ordinary time has been regarded as possessing one dimension. But may not Time when fully understood prove to be more complex? There are many reports of interior experiences where events covering great lapses of time were passed through during a few minutes or seconds of our ordinary time. Now is it not likely that these experiences are but expansions of instants or points of objective time? Perchance the instant thickens into other dimensions to the consciousness that is properly awakened. Time, like Space, may open out into the richness of endless dimensionality.

Numerical Relations

Behind manifestation there is nothing more fundamental than Number. The first *desideratum* of Manifested Being is Form, for Manifestation is Form in contradistinction to the formlessness of the Unmanifested. Form may or may not have Spatial and Temporal qualities, but whatever its nature, it always has parts. And underlying “parts,” of necessity, is the principle of Number. In one single, undifferentiated reality there is no Form, no expression. There is only the possibility of Form. Through the principle of manifoldness that potentiality becomes an actuality. Thus by Number, non-existent Be-ness becomes potent Being, and Being involved into the multiple forms of Manifested God.

With Number occupying so basic a place, it follows that the first record of Cosmic Unfolding lies in Number. In the inherent nature of the manifold bound in each number is found the grand schematic and necessary steps of the major and minor outpourings. Within the bounds of this schematism variability and color may play. But outside these bounds nothing is manifested.

In the third volume of *The Secret Doctrine*, H. P. B. made the following statement concerning number:

Let the student remember that number underlies form, and number guides sound. Number lies at the root of the manifested Universe: numbers and harmonious proportions guide the first differentiations of homogeneous substance into heterogeneous elements; and number and numbers set limits to the formative hand of Nature.*

Of this quotation the part to which we wish to call especial attention lies in the last clause where reference is made to both number and numbers setting limits to the formative hand of Nature. What does this mean if not that the principle of Number divides into two aspects: first, that of the Law of formation underlying Number, and second, that of the peculiar properties of individual numbers? The formative hand of Nature is controlled, first, by a law of order, and second by collections of special powers.

The study of numbers would be the study of these collections of special powers. Numbers enter into every branch of mathematics, but they are the peculiar subject-matter of the best known branches such as Arithmetic, General Algebra and the less familiar Theory of Numbers. These fields will accordingly have peculiar interest for our future investigations. But it must be remembered that these exoteric subjects deal only with the external properties of numbers. For us is a deeper task of seeking within these properties an interior meaning. This will constitute the chief part of the work of the present course.

Logical Relations

Behind numbers and their collections of special properties there lies the principle of order and formation by which they are generated. This is “number” used in the singular in the above quotation. Now this underlying principle of Order is really the principle of Logical Organization, which is the behind the behind of the formal side of all Manifested Being.

*Ibid., 436.

While the possession of parts is essential to all form, yet there is another factor of equal importance and that is the line which unites the parts into a single organized whole. This line is the principle of connection uniting the different parts so that each part stands implying and implied by all others. And this Law of Implications is the great binding principle of formal Being.

The principle of implication, or Logic, underlies and guides all mathematical work. But in the Algebra of Logic it has also been made a subject-matter of mathematics and so it has a place for special reference in this lesson on mathematical subject-matter.

Relations between Operations

The discussion of the branch of mathematics which has operations for its subject-matter is very technical and will not be of occult interest to us at present. Consequently, we will not enter into any consideration of this field at this time. It is mentioned in this lesson only to make the classification of mathematical subject-matter complete.

Questions on Occult Mathematics: Series One, Lesson Two

1. Applying the Triple Key to Mathematics, what is the mathematical correspondence of Consciousness? Of Matter? Of Force?
2. To which branch of the Triple Key do we give chief attention in the study of Occult Mathematics? Why?
3. (a) Can Consciousness and Force as such be objects of Consciousness? Explain the answer. (b) If they cannot, how is it made possible that we may speak of them?
4. Which aspect of any portion of manifested being can we contemplate? Hence, with what must our study of Being begin?
5. (a) What is the peculiar characteristic of mathematical truth? (b) What is the meaning of hypothetical and categorical truth? Illustrate. (c) Is there any sense in which we may speak of Mathematical truth as categorical? If so, in what sense?
6. How is the categorical aspect of mathematical truth made manifest to us?
7. Whose conception of Space is followed in this series of studies? Who is Immanuel Kant and what place does he occupy in the philosophical world?
8. What are the relationships with which mathematics deals?
9. (a) Differentiate between the naive and the Kantian conception of space. (b) Point out the correct and incorrect sense in which we may speak of space as a “subjectively-imposed form.” (c) How does Space appear to the personal Ego? To the Universal Ego?
10. In what sense is Space an illusion and in what sense is it real?
11. What kind of a creative act of God is Space?
12. Is there more than one kind of Space? Is there any formal mark by which one Space may be known as the true Space?
13. Does the fact of having many forms of space in which He may manifest leave God unrestricted? If not, how is He restricted?
14. (a) What is the Absolute Geometry? Can it be formulated? (b) By what practical method do we determine which Geometry applies to our Space?

15. Have we a reason to believe that in “simplicity” we have more than an exoteric practical test of working Truth? Why?
16. In what sense is Time real and in what sense is it illusory?
17. (a) How does mathematics regard Time? (b) What is the possible connection between Time and the Fourth Dimension?
18. May Time possess more than one dimension? Explain.
19. Why is number a necessary condition of Manifestation?
20. What great peculiarity marks Number Symbolism?
21. In the quotation from H. P. B., how are both the words “number” and “numbers” used?

SPECIAL COURSES OF INSTRUCTION: OCCULT MATHEMATICS

Series One, Lesson Three: Interpretation of Direct Operations

In the series of investigations that has led to the organization of this course of studies it was very early discovered that some method of systematic analysis of Number, with respect to its interpretation, was of the utmost importance if the study of the occult aspect of Number was ever to assume the dignity of a science. The arbitrary attributing of certain meanings to given numbers on the part of ancient or modern writers can never constitute the basis of a science of numbers. Such a science requires the formulation of a principle of combination whereby number complexes may be reduced to a combination of simples, thus making it possible by a consideration of the simple elements together with the peculiar mode of their organization into the complexes to come to an understanding of the basic meaning of the complexes. Accordingly, it is probable that the partial discovery of such a method an analysis constitutes the most important contribution that we have been able so far to offer to this field of investigation.

We have just spoken of the importance of a system of investigation whereby the study of numerical entities may be reduced to a consideration of a compound of elements. Now, before we proceed to the elaboration of such a system, it is desirable that we should warn the student that however valuable such a system may be, yet by itself it does not constitute a sufficient instrument for the construction of our science. Compounds are compounds only from certain points of view. There are always one or more aspects of them wherein they serve as simple, irreducible elements, and inversely, every element has aspects in which it is a compound. A beautiful illustration of this principle of inversion is afforded in the branch of mathematics known as Projective Geometry. In this subject, at times a line is regarded as composed of the manifold of positions occupied by a point moving along a given path. At other times the point is defined as the complex of all the lines passing through a common center. The essential nature of the point and the line is such that it lends itself equally well to either interpretation.

From the fact of the invertibility of simples and complexes there are two important lessons for us to derive. First, by keeping clearly before our minds the fact that the relationship between elements and compounds is not absolute but relative to certain points of view, we are helped greatly in keeping ourselves from being caught in the net of *Maya*. *Maya* has sway only over those who attribute substantiality to its transient and relative forms. When those forms are really known as relative the net of *Maya* is rent. This outer world is not then denied, but it is known as simply the means of expressing the unseen Reality. As the Reality ever transcends the outer world, it can be given expression only under one aspect or another. Realizing that Appearance is an aspect only, the student has overcome its power to deceive. The second lesson to be learned is closely related to the first. We learn that the discovery of the essential reality of things cannot be attained by the power of analysis. It is the irreducible residuum that remains after the analysis of every fact. This reality can be known immediately only and therefore by the direct powers of the soul alone. Thus, applying this principle to our present field, we would say that through every number there plays a truth that never can be fully revealed, a truth that belongs to such numbers that is peculiar and not to be deduced from the composition of a compound.

Having before us the principle just elaborated, we shall proceed to the formulation of our system of analysis, knowing that what we shall find is simply an aspect of Truth, but knowing equally well that on this plane our business is the expression of aspects.

In the science of numbers combinations are formed through the use of a limited set of Operations. These operations fall into two classes known as the direct and the inverse. The direct operations are those known as Addition, Multiplication and Raising to Powers or Involution. The inverse operations are operations which accomplish just the opposite effect of the direct operations and are known as Subtraction, Division and the Extraction of Roots or Evolution. Of these, at the present time, we shall offer an interpretation of the direct operations only for the two reasons, i.e., that they are the only ones which we shall need in the present studies, and they offer themselves to interpretation much more readily than inverse operations.

Addition

First, how shall we interpret Addition? Let us consider any number such as Five. Five may be regarded as two plus three. In some way, then, the force of two and three are both present in five. But on the face of five, two and three do not stand out peculiarly as they do, say, in the case of six which is a product of two and three. In fact, numbers where two is a factor have been peculiarly named even numbers as opposed to odd numbers in which two is not a factor. No numbers are peculiarly named because they are composed of a sum containing some special given number. We are not inclined to think of a given number as the sum of two or more numbers unless we have some special reason for doing so. But if a number is not a prime we are very much inclined to think of it or the expressed product of its factors as being for most intents and purposes the same thing. In Algebra, for instance, we regard multiplication as not separating terms while addition does. By a “term” is meant a combination of numbers and letters that is regarded as a single entity. Back of this practice there must be a reason, and that reason we feel we have found, at least in part. When a single entity is analyzed by the use of the plus sign it gives the sense of a rather strained or forced separation. Isn't it because the relationship is of such a nature that it is lost when it is expressed in the sum in a sense that is not true of a product? When two plus three becomes five the five is more independent of the two and the three than is the six which is the product of two and three. These considerations have led to the suggestion that the powers of two and three are lost in five in such a way that they have become implicit rather than explicit elements in the compound.

An analogy of the relationship in mind is presented in chemical compounds. For example, water is a compound of two parts of hydrogen and one of oxygen. These component elements are both gasses, one of which is very readily combustible while the other is the almost universal medium that makes combustion possible. But in contrast to these properties, water is the most common and at least among the most powerful inhibitors of combustion. The powers of hydrogen and oxygen are lost in the water composed of them in such a way that they are no longer explicitly present. But they are there as potential powers. Thus potassium burns in water because of the hydrogen in it. Further, the peculiar qualities of water have in some way come through the union of hydrogen and oxygen. It is their union that has brought these qualities into expression, so the water is not independent of, but is related to the oxygen and hydrogen. One relationship is suggested in the fact that the fire-suffocating property of water is the polar opposite of the corresponding properties of oxygen and hydrogen.

Multiplication

The operation of Multiplication we have unavoidably considered in part in the discussion of Addition. This was unavoidable because the interpretation of these two operations was largely made possible by a consideration of the two in contrast to each other. Thus in the case of the example already cited, the two types of combinations of two and three which give five and six respectively show two very different sets of qualities. One of these we have already designated as an union of the properties of two and three in such a way that they are implicit elements in the sum Five. It is at once suggested that the other gives a combination of the powers of two and three in such a manner that they are explicit elements in the product Six. And by explicit elements or moments we mean powers that operate openly or on the face of the compound. Thus six can be considered as two threes, i.e., that it is three under the action of the power of two so that one three stands in opposition to the other three. Similarly, six is a compound of three twos, or two acted upon by three. In the case of five, on the other hand, two and three loose their identity, as it were, in the creation of the new compound.

The nature of the union produced by the operation of multiplication is very well illustrated in the physical union of two or more elements or compounds. Consider the mixture of salt and water. Ordinarily, at least, salt and water do not form a chemical combination. They make what is termed a solution, or a combination in which the molecules of each substance stand in a relationship of physical juxtaposition to each other only. Neither loses its identity. The water is still water, and the salt is still salt. But, on the other hand, each has gained something. The water has become salty and the salt has assumed a liquid form. In other words, in this sort of mixture each component part retains its identity but is enriched with the addition to it of qualities belonging to its associates.

Involution

The remaining direct operation that calls for interpretation is that of Involution. This is an operation less familiar to the lay consciousness than the two just analyzed nor is it so frequently employed. Consequently its interpretation is one that affords considerable difficulty. However, we have a suggestion that we offer tentatively, at least, which seems to be satisfactory.

In our interpretation of numbers we shall work on the assumption that every number represents a differentiated aspect of the manifested universe. Now one of the necessary characteristics of an universe that marks it off from what we might call a multiverse, is that in every aspect the whole universe is potentially present. In other words, the universe is not divided into parts as we might divide any objective thing. All is present in every aspect, yet not present in such a way as to make all aspects alike. Herein is a mysterious but necessary truth. In applying this principle to numbers we shall have to be able to find the whole universe rolled up, as it were, in each and every number, yet under forms peculiar to such numbers. Now, since for its facet of Being Number is a complete key, it follows that every phase of the universe must have its numerical symbolism, and visa versa, each number corresponds to some phase of the number facet of Being. Thus, for each individual number to repeat the story of the universe it must have an unique correlation with every other number. Where better do we have this correlation represented than in

the series of powers of each number? Each number raised to all the powers represented by every number of the entire number system will reproduce the whole universe under that peculiar phase. Thus, two cubed would be two manifesting peculiarly the power of three contained within it. Two to the fourth power would be two expressing essentially its quaternary aspect, etc., etc.

In the light of what has just been said the question might arise as to just what is the difference between the three twos in six and the three twos in eight. The difference is simply this. In the case of six two is externally associated with the powers of three. Three operates upon two, as it were, from the outside. In the case of eight it is the inherent trinitary power of two manifesting.

Summing of Digits

There is a relationship between numbers considered important in occult works on number which, however, is of very little value for exoteric mathematics. It is the sum-value of the digits of a number greater than ten, when reduced to a number between zero and ten. Because of the general use of this operation in occult works it is necessary for us to offer some interpretation of it. Now the idea that has come to us is that the sum of the digits expresses what we might call the goal attained by the action of the combination of powers represented in the original number. Thus, for instance, when we say that twenty-seven has the value of nine, we would mean that the combination of powers operating through twenty-seven results in an effect that lies in the compartment of the universe presided over by nine. Similarly, thirty-six would bring about an effect lying in this same compartment, but the mode of approach and combination of powers would be different, etc., etc.

With the foregoing development of interpretations of numerical operations we have builded a machinery for the analysis of all numbers beginning with one, provided they are taken in order of magnitude. As we have indicated, this method by itself will not enable us to say all that is to be said of every number, but it will enable us to know something of its meaning, if we have some familiarity with its component parts. To this extent we have formulated the rudiments of a science.

To close this lesson probably it will be well to give explicit statement to a part of the purpose of this series of lessons that has been implied in the body of the preceding discussion. It is not our purpose to repeat old interpretations of number discovered in past ages, except incidentally. We shall seek to discover the inner meaning of number and form by use of the principle of correspondence with respect to the science and life of this age.

Questions on Occult Mathematics: Series One, Lesson Three

Interpretation of Direct Operations

1. Why is a method of analysis so essential to the building up of a science?
2. Illustrate, from your own experience, that simplicity and complexity are purely relative to the point of view of the observer, or thinker.
3. What two practical lessons are to be gained from a realization of the fact that simples and complexes are invertible?
4. What is the difference between direct and inverse operations?
5. Explain the force of Addition.
6. Give an illustration, other than that offered in the lesson, of the entering of elements as implicit factors in a compound.
7. Distinguish between the force of factors in multiplication and that of the parts of a sum.
8. Give an instance of your own which will illustrate a combination of forces which remain explicit in the compound.
9. It is said that “the Whole is reflected in every part”; show how, in Involution, we have a mathematical representation of this fact.
10. How would you interpret the relation between a number greater than Ten and the number which is the sum-value of its digits when reduced to a number less than Ten?

(To make this question clear it is illustrated. Let 97 be the given number. The sum of the digits is 16, the sum of 1 and 6 is 7. So 7 is the sum-value of the digits of 97 when reduced to a number less than 10. In this case the question would become: What, in an Occult sense, is the relationship between 97 and 7?)

It is important that the student write out the answers to these questions and submit them for examination and correction if he would gain the full value of the lessons to come.

SPECIAL COURSES OF INSTRUCTION: OCCULT MATHEMATICS

Series One, Lesson Four: Interpretation of the Numerical Elements

Symbolic Importance of All Aspects of Being

Occult Philosophy postulates that nowhere in the Universe does there exist a thing, a condition or a relationship that is the outcome of fortuitous circumstances. All that is, considered from every aspect, is the result of Divine purpose operating through some portion of the many diversified forms of manifested Being. As a consequence all that can be apprehended in the Universe, no matter how unique and original a discovery it may appear to be, carries an inner meaning. Nothing exists in this nether world that is not a symbolic portrayal of Spiritual Truth.

This principle of the symbolic importance of all things, however apparently insignificant, naturally has its application to numbers in all their aspects. For the present series of lessons some of those aspects will have much less importance than others and will be given little, and in some cases no consideration. But this fact must not be taken to indicate that we regard such aspects as being incapable of possessing prime importance when approached from some other point of view. We simply do not and cannot approach the science of number from all points of view at once.

For the purposes of this course the properties of numbers which will stand out as pre-eminently of first importance are those which inhere in the abstract nature of Number itself. Thus we shall maintain that the symbolic interpretation of the formal properties of Number is most basic and Cosmic in its import. Properties growing out of the decimal system of organizing numbers, and the physical symbols used for their representation will be regarded as having a more specialized or concrete significance. Thus where the formal properties of number may portray that which is necessarily true of all possible universes, the more special properties probably apply only to certain worlds or systems or *manvantaras*.

Zero

The center around which the manifold expressions of Number radiate is that mysterious and little understood number, Zero. The number which stands for nothing, yet is something. The number which is no-number and yet which is the source of all Number. With this we shall begin our interpretations.

Standing in the point from whence all numbers radiate and yet itself not a number, Zero clearly stands in the same relationship to the number-system that the Unmanifest bears to the manifested World. From out of the Unmanifest all things proceed, still the Unmanifest is no Thing. All that is exists through its opposite. No statement can be made, and indeed, naught can be apprehended, except that of which the statement is made or which is apprehended stands in opposition to its own other. Aught that stands in uncontrasted Oneness could never become a part of consciousness. There is Thinghood because there is the Unmanifested No-Thing to which it stands in opposition. There is number because beneath there is in contrast, Zero or the No-number.

That Zero symbolizes the Unmanifest is indicated again in the secondary property of Zero inhering in the physical symbol employed to represent it. We write Zero with a circle. Now the circle and the sphere are the great symbols of unmanifested Beness. Thus applying the postulate of

Occult Philosophy, that no circumstance in the Universe is the result of Chance, we arrive at the conclusion that a circle is used as a symbol for Zero for the reason that the Circle and Zero correspond to the same aspect of the Universe.

This identification of the interpretation of Zero with that of the Circle makes it of importance that we would justify the use of the Circle as a symbol of the Unmanifest. We find this justification through a consideration of the properties of the circle. All parts of the circle are equidistant from, and symmetrically related to its center. This gives to the circle or the sphere the peculiar property of having no part standing out in contradistinction to the rest. Thus the circle conveys a symbolism of a Thatness as opposed to a Whatness, to use the language of the scholastics. A knowledge of “That” is a bare knowledge that That is. It is not a knowledge of its inherent nature. A knowledge of “What” is such a knowledge of the nature of a thing. To know “what” a thing is, is to know aspects, and thus to place parts in contrast to each other. On the face of the circle no part stands out in contrast to other parts. It thus conveys the idea of our knowledge of Beness, which is a bare knowledge that IT is, in so far as it is a positive knowledge at all.

The circles that we use to portray the Unmanifest are limited figures, yet the Unmanifest is unlimited except by the Manifest. If the circle is to be an adequate symbol of the Unmanifest it must portray all we know of IT. Now a circle is not only a line. It also determines a plane, and this plane is unlimited in its extension. This unlimitedness of the plane signifies the unlimited aspect of the Unmanifest. The bounds of the circle mark the limited positive knowledge we have of raw Beness, namely, merely that it is. The surface of the plane outside that bounding line marks our negative apprehension of Beness which is that IT is not anything that Being is.

Having discussed the abstract interpretation of Zero as the Center from which the entire number system radiates let us proceed to investigate the peculiar force of Zero as it enters into the three direct operations analyzed in lesson Three.

In the first place, under the operation of addition we shall note that every number may be regarded as a sum of which Zero is one of the elements. That is, every number may have Zero added to it without having its value changed. Now the force of addition we have explained as being the uniting of powers in such a way that they become implicit components of the resultant. The component powers lose their identity in the forming of a new type of power, yet they stand as essential contributory factors in the latter. Thus from the fact that Zero may be regarded as standing as a part of every sum, we would conclude that the Unmanifest represented by Zero is an implicit element operating within every differentiated power of the manifested Universe. The Unseen stands hidden in every point of the World. It does not lie hidden in some distant corner beyond stellar space, ever aloof from all Being. It is right here in the paper and ink of this manuscript. It is in every atom, cell, man or star. It is everywhere, necessary to all Being, yet unknown.

In contrast to its action as an element of every sum, when Zero enters as a factor of any product the resultant is always Zero itself. Now we have interpreted multiplication as a combination of special powers in such a manner that they form a new compound power, yet not losing individual identity and functioning. The power of any number entering as a factor into any product is explicitly present in its peculiar specialized form in the resultant. When Zero is a factor the product is always Zero. In other words, the Unseen operates explicitly only in the Unseen.

But when we speak of the Unseen as operating explicitly, do we not involve ourselves in a contradiction? Surely the word “explicit” can apply to the manifested world alone. The Unseen in its very nature can never be explicit. Here is one of those paradoxes, the solving of which requires

that we shall give to concepts a certain fluidity. To become universal, concepts must forego concrete rigidity, yet their acquired fluidity must be subject to law. When we say that the Unseen is explicitly present only in the Unseen, we must understand the explicitness to mean that the Unseen operates on its own peculiar nature as Unseen only in Itself. Nowhere in its Other, the Manifested World, is it explicitly a part.

There is still another feature demanding interpretation, found in the fact, $0 \times A = 0$, where A is any finite number. This A is just as much a factor in the product Zero as is Zero itself. Consequently, following our rule, we must say that any number A is an explicit element in Zero. Thus, every power in the Universe is explicitly present in the Unmanifest. In other words, the Unmanifest is of that peculiar nature that in it all things are in their own especial character at the same time. The exclusiveness of Being which causes the conflict of opposites has no place in the unbounded halls of Beness.

Our final discussion of Zero will be concerning its action used as a “power” in the special sense of the operation of “involution.” All numbers, other than Zero and Infinity, when raised to the Zero power become One. This surely is a remarkable property.

It will be remembered that in our discussion of the operation of Involution in Lesson Three, we interpreted it as representing the special action of the functions expressed by the numbers from Zero to Infinity through each of the respective “powers” of any given number. Every diversified aspect of the Universe has within it a reproduction of every aspect of the Universe. When any number is raised to a given “Power” it means that the aspect of the Universe, symbolized by the exponent number, which also is a potential part of the original number, is now standing out in dominant expression through the original number.

Applying the foregoing to the case of $A_0 = 1$ (where $0 < A < \infty$), we make the interesting discovery that when the Unseen aspect of any differentiated power of the Universe is dominant, the resultant is simply the Manifested Universe as a totality. This means that when the Unmanifested plays through any special quality of Being, it involves the expression of the whole Universe itself. The unseen can play through no point in isolation. Every differentiated part in order to realize the Unseen must become one with all Being. That is why mystic realization is only through the Path of Brotherhood.

Questions on Occult Mathematics: Series One, Lesson Four

Interpretation of the Numerical Elements

1. Why does Occult Philosophy postulate that nothing exists as a result of fortuitous circumstances?
2. Give an example of the truth conveyed in the sentence: “Nothing exists that is not a symbolic portrayal of spiritual truth.”
3. What is the most basic interpretation of the formal properties of number?
4. What may the formal properties of number portray? What may the special properties portray?
5. What is the Source of all Number?
6. Compare the relationship of Zero to Number with that of the Unmanifest to the Manifest.
7. Show why we are justified in using the Circle as a symbol of the Unmanifest.
8. What to the bounds of, or the line of boundary of, the circle portray?
9. What does the plane so bounded portray?
10. In the operation of addition, does the adding of Zero to a number change its value? Why?
11. What is the result when Zero is used as a factor? Why?
12. Show the difference in the mathematical use of the terms “explicit” and “implicit.”
13. Show why Zero times A equals Zero.
14. Why must each differentiated part become one with the All?

SPECIAL COURSES OF INSTRUCTION: OCCULT MATHEMATICS

Series One, Lesson Five: Interpretation of the Numerical Elements

Number One

In number One we find the first expression of Number. Zero is identified with the number system through its representing the negation of number. The opposite of any Thing is in one sense the most closely of all identified with the given Thing. This is due to the action of the Great Law of Polarity. Now in this case the opposite poles are Manifested Being and Unmanifested Beness. Of these, Number One stands as the first expression of Manifested Being.

Since in Zero and One we have the peculiar numerical symbols of the Unmanifest and the Manifest, we shall find through a comparative analysis of these symbols certain of the contrasting basic characteristics of the two grand aspects of the Absolute. If we turn our attention to the physical form of the symbols themselves we shall discover an interesting set of contrasting qualities.

We symbolize Number One by a vertical line and Zero by a circle. Now the opposite of a vertical line is a horizontal line, usually represented as a straight line of finite length. But if we produced a horizontal line we would find that when extended to its ultimate form it would not be a straight line but a circle. This fact will become clear when we stop to consider the genesis of vertical and horizontal lines. A vertical line is a portion, or totality, of a line drawn through the center of the earth. A horizontal line is one which is perpendicular to the vertical line which it cuts. Now a horizontal line, however short, will always cut an infinite number of vertical lines radiating from the center of the earth. Thus, in order that a horizontal line may always be perpendicular to the vertical lines that it cuts, it must be an arc, or the entirety of a circle with the earth as its center. In practice, when short segments are used, a straight line may be employed to represent the horizontal line, as a circle of curvature so low as that of the circumference of the earth is practically indistinguishable from a straight line.

Thus we see that Zero and One are symbolized by spatial configurations that have diametrically opposite interpretations. Now the circle represents a conservative containing force. It is not force directed towards any goal. It is a force that holds together or unifies in a negative sense. It is the force of gravity, or attraction, satisfied and thus action ceases. In contrast, the force of the vertical line is a positive, directed, unified, piercing force. The force of the vertical line tends to break through the containing force of the horizontal line, or circle, and thus breaks the perfection of the circle in the effort to attain a goal lying beyond or within.

Thus in the Number One we have the representation of the Divine desire which caused the fall of God out of the perfection of unmanifested beness into the imperfection of evolving Being.

A metaphysical question of great importance arises in connection with the relationship existing between One and Zero. Is the Absolute all Zero at one time, and all One at another? Or is it both Zero and One always? In other words, is the Absolute Unmanifest and Manifest in sequential order, or are these states co-incidental modes of the divine totality? The form of the expression frequently employed to express the relationship between the manifested and the unmanifested God would lead one to think of the relationship being one of sequential order. But let us consider for a moment. The state of unmanifested perfection is incomplete since it is unmanifested. On the other

hand, manifested Being is in a state of development and therefore imperfect. Thus in neither state is God unlimited, and therefore in neither do we find the Absolute. For the Absolute, as the all-inclusive, must comprehend the limitation of imperfection, as well as the fullness of perfection. Thus the Absolute must be the Dual Entity which is both Manifest and Unmanifest.

If we turn to the *Bhagavad-Gita* of the Hindus, we will find *Krishna* represented as half in darkness and half in light. From the half in Light, He creates the Universe. Again, in the Irish Mythology, the High God *Lir* is spoken of as *Lir* of the Half-tongue. In other words, it is *Lier*, the Half-expressed. Now in both of these instances God is represented as being at once both Light and Dark and both expressed and unexpressed. In *The Secret Doctrine*, we find as the first sentence from the “Stanzas of Dzyan” the words:

The Eternal Parent, wrapped in her Ever-invisible Robes, had slumbered once again for Seven Eternities.

Now this reference to a measurement of a period of slumber is meaningless if all process in the universe had ceased. An absolute rest extending through all Being would be timeless and thus incapable of measurement by Seven Eternities. The fact that there is a rhythm in the slumbering of the Eternal Parent and that, as explained in the commentary, the periods of rest and of activity are of equal duration, indicates simultaneity of rest and activity as well as succession of these states. The manifested portion of Being measures the rest period of the unmanifested portion and sends the impulse to awaken.

Again, it is hardly correct to think of the awakening period being at one time for the half of the whole of the Deity. Rather is there a continuous flow out from the unmanifest into manifested being, and an equally continuous return stream from activity to rest. The Secret Doctrine is not merely an account of that which happened in the past. In its broad Metaphysical outlines it is a story that is being enacted in every phase of Being at every instant somewhere within the Whole. For any individual portion of the Divine Being it is a history and an outline of future unfoldment. But for God in His totality, all of the truth of the Secret Doctrine is realized fully in the present moment.

Thus we must conclude that God is both Zero and One co-incidentally. As we discuss Zero or One in separation we are considering simply aspects of the Whole. If we may anticipate a little of the discussion of a number which will have its place in a subsequent lesson, we would like to point out a certain property of the number ten. Ten is represented by a combination of One and Zero. This would seem to represent the conscious realization of the fact that we have just been trying to bring to light. In Ten we have the realization of the Unity of the Unseen and the Visible. The unfoldment preceding Ten is a period in which that fact is not realized as a living reality. It might be apprehended as a theoretical necessity, but not realized as an inherent necessity of Being.

We now proceed to the discussion of the force of One when entering into the three operations.

First, One is a part of every sum greater than Zero. This means that the principle of Unity is an implicit or unseen element in every diversified power of the universe. Thus behind all things and inherent in all things is the Oneness out of which all comes. We may say that this is the actual Oneness of Being which, however, is not realized by the particular forms of Being. Even that portion of Being that is caught in the Illusion of Separateness is still a part of the Whole. In fact it still is One. But in this case that unity is not realized. With all of Being that we know, this illusion

of separateness obtains to a greater or less degree. Thus with all such the principle of Unity is to a greater or less degree an unrealized though necessarily an actual fact.

Second, One is a part of every product including Zero. Every number from Zero to Infinity may be regarded as the product of two or more factors from the point of view we are taking in the present discussion. Primes as well as other numbers would be considered as a product of themselves multiplied by One.

Now following our scheme of interpretation, we would say that the presence of One as a factor in every number would indicate that the principle of unity was an explicit or realized fact in every aspect of the Absolute including the Unmanifest. As we look forth into Being we see that even that which is caught most by the illusion of separateness in its very accentuated consciousness of Otherness realizes an unity with its Other. If x is other than y , then x is bound to y by that very relationship of otherness. Thus the relationship of abstract Otherness is unavoidably unifying. Consequently the center of consciousness that is most filled with the illusion of separateness cannot avoid a certain realization of Unity.

An interesting fact from the foregoing is that in Zero the principle of unity does not seem to be an implicit fact, yet is explicitly present. This leads us to the paradoxical proposition that the Unmanifest is expressly One, and expressly One only. The only explanation of the paradox that seems to offer is that the Unmanifest is the end of evolution as well as the beginning, and the end of evolution is the conscious realization of unity with all. Thus the Unseen possesses the realization of perfect unity, and only the Unseen possesses this. In all manifested Being the realization of the Unity of all is ever but incompletely realized.

Finally, every number raised to the power of One is itself. Thus any power or division of Being when expressing peculiarly its inherent unitary aspect is just itself. Any number other than One raised to any power but One becomes something other than itself. Thus any diversified portion of Being expressing inherent aspects of itself other than that of unity becomes reflected under a guise that causes it to become distorted from its true self. Here we have a symbolic expression of a great Occult principle. When any separated aspect of God renounces itself to become One with God, then does it realize most completely its own self, not merely as One with God, but also as a special form of God. Renunciation of what we are individually is to realize most completely what we are individually. To devote ourselves especially to any of our aspects other than that of our unity with the Whole is to become reflected in imperfect form.

Questions on Occult Mathematics: Series One, Lesson Five

Interpretation of Numerical Elements: The Number One

1. In what manner is Zero identified with the Number system?
2. Why is the opposite of a number, a force, etc., always closely identified with it?
3. Of what are Zero and One the symbols?
4. Why, mathematically considered, is the ultimate form of a straight line that of a circle?
5. Compare the Force inhering in Number One and in Zero.
6. Is the Absolute manifest and unmanifest in sequential order, or are these states co-incidental? Illustrate.
7. What does the union of one and zero, or 10, symbolize?
8. What number is an implicit element in every diversified power of the universe? Why?
9. Since any number multiplied by one remains but itself, may we not say that one is also an explicit fact in every aspect of the universe?
10. Why does a strong sense of “otherness” or separateness, also indicate a perhaps as yet unconscious but strong sense of Unity?
11. The principle of Unity seems not to be implicitly present in Zero but to be explicitly present. Why is this so?
12. Show why, from a mathematical point of view, renunciation becomes most perfectly, possession.

SPECIAL COURSES OF INSTRUCTION: OCCULT MATHEMATICS

Series One, Lesson Six: Interpretation of the Numerical Elements

Number Two

In the preceding analysis of Number One we discovered the first great Truth of Manifested Being, i.e., that of the fundamental unity of all that is. In the present lesson we have brought before us the complementary Truth of the relativity of all things. Now from an abstract metaphysical point of view it is impossible to say that the manifested universe hangs more especially upon either one or the other of these two truths. But on the one hand, realization of Being involves and underlying unity connecting the Realizer and the Realized. But on the other hand, that realization is equally dependent upon the duality of the Realizer and the Realized. For certain practical reasons growing out of the character of the race-thought that is typical of this age, it has been necessary to drill the occult student especially in the truth of the Unity of all Being. Consequently, the tyro in Occultism is usually well versed theoretically in the fact of the Oneness of all, but is apt to regard the principle of relativity simply as an illusory veil that blinds the real truth. Now while there is that force in the principle of relativity, yet it is not to be identified with that aspect of itself. In the principle of relativity we have also the necessary road to the attainment of the consciousness of the One Divine Light that lies within. We might say that as an abstract fact the oneness of all Being is, was and ever will be, but as a realized element in individual consciousness it is an attainment. Now, it is that attainment which for us as a part of the manifested Being is the all-important interest. Accordingly, all that stands out as essential to that attainment, stands as possessing equal importance when taken out of relation to any special consideration.

With Two, we have brought into the universe the shadow of God Himself. Two is a sum of One and One. It is the One Unified Whole standing in opposition to Itself. In one sense we may say that it is God doubled; in another that it is God divided. The exact Truth is not expressed by either of these notions alone. It is something that includes both and transcends them; in fact it transcends the powers of relative expression. The Whole of Being is portrayed in its shadow, yet the shadow is a part of that Whole. This is a mysterious and apparently contradictory notion, yet it is one that is perfectly in accord with certain mathematical properties. In our ordinary conception of a part we have the idea of a portion of the whole which, in some measure, is less rich in elements than the Whole. For instance, in a drop of water we would expect to find a smaller number of molecules than we would, say, in a quart of water from which we had taken that drop. But this is a property that holds generally only in the case of finite manifolds. In the case of an infinite manifold a proper part need by no means have this property. In fact, one mathematical writer at least has employed the idea of defining infinite manifolds by the presence in them of proper parts which are equally rich in elements to the whole. Let us apply this principle to the interpretation of the fact that the shadow of Being reflects the Divine Whole and yet is contained within that Whole. This is seen as a perfectly logically sound fact if we view the Divine Whole as infinite. Infinite Being would possess the mathematical possibility of containing within itself a proper part of which the elements would correspond, point by point, to every feature of the Whole. Accordingly the coordination of the universal unity of all Being with the principle of Duality has forced us to the necessity of regarding the universe as infinite, for only so can we free ourselves from logical contradictions.

The reflection of Being in its shadow is not a division existing spatially at one point in the universe and nowhere else. It is not like the image in a mirror which exists only for certain definite points of vision. No; the principle of Duality permeates the whole of Being so that each and every point is a center of reflection. This is necessary for the reason that this principle is not something imposed upon God from without; it is a part of the very essence of God Himself. To contact Divine Being at all is, among other things, to contact this principle. Consequently, at every point in the universe, that universe is divided into two, the Reflected and the Reflection, the Macrocosm and the Microcosm.

We have already indicated that the principle of Duality, or relativity, is absolutely essential to all movement. If God had been satisfied to remain in a state of undeveloping perfection, He would not have had to manifest under the aspect of relativity. But so soon as he seeks to move toward the realization of something lying beyond, He must pass through the labyrinth of appearances. He must enter into Becoming. Now the basic principle of Balance that makes a universe possible requires that the process of Becoming shall have two wings. Each concentration of Divine Consciousness into a phase of itself creates a drawing into the opposite phase. If this were not true the universe would over-balance, as it were, and lose its unity. Part of itself would be lost. By this concentration in phases, and swinging into their opposites, new complexes of realization are born; potentialities become attained actualities. This swinging is necessary for the building of these new complexes. But the concentration of consciousness in a phase of Being, while necessary for the ultimate expanded realization, involves a price. This price is more or less complete loss of consciousness of Being as it is outside and beyond that given phase. This loss of consciousness is not eternal. There is a Path by which it is regained with the addition of all the riches attained in the interim. There is correspondingly, too, a path by which all that richness is lost. But during the period of Becoming the fuller consciousness is lost while the special realization of a phase is being attained.

Now this loss of consciousness results in the most critical problem of all life. The phase which is the center of concentration tends to take on the appearance of being Reality in and of itself, out of relationship to all the rest of Being. The rest of Reality is forgotten since the consciousness of it is blinded for a season. The consequence is that the Great Illusion of Separateness is born. Each individualized portion of God tends to see itself in its specialized aspect as the Center of the Universe. This is the inversion of the Truth that the Center of each self is the Center of the Universe. But it is not so in its specialized aspect. The consequence of this inversion is that there is a struggle between the specialized aspects of Being. Each aspect tends to live for itself out of relation to other aspects. Accordingly, in place of reciprocation we have conflict of demand. In place of co-operative relationship we have exclusiveness. Thus is war brought into the world.

The conflict that we have just seen brought to birth is a corollary of the negative aspect of Becoming. It is unavoidable but must be transcended. Beyond the concentration in a particular phase there must come the realization of the union of that phase with the rest of Being, else the Light of consciousness will burn out. This we can see for the reason that consciousness is a flame that draws its substance from the breast of the All-Mother, and thus it builds around itself a crystallizing wall that separates itself from the All-Mother, then sooner or later the supply of oil left in that crystallized center will be exhausted. The individualized consciousness will grow dim and finally enter into the great darkness. So if individualized consciousness is to persist, sooner or later there must come the conscious union of the individual with the Whole. That conscious union opens

the channel of inflow from the All-Mother and the flame of individualized consciousness becomes immortal. This is a step beyond that represented by the principle of Duality and is realized when two becomes three. The three is the two in one. It is each aspect and its opposite bound together in a conscious common unity. Aspects still are. Duality or relativity still operates. But consciousness has expanded so as to contain the relative within a comprehensive whole. When two becomes three the unavoidable conflict has become transcended.

In referring to the force of the Number Three we are apparently stepping beyond the bounds defined when we entered upon a discussion of number two. But the interaction of the powers of all the numbers is so close that it is impossible to make any study of one number in complete isolation from all the rest. The very principle of relativity introduced by the Number Two would make this so. Now it is not the purpose of the present discourse to enter into an exhaustive analysis of the principle of duality. That principle is so vast in the intricacies of its application that not only a treatise, but even a whole library would fail to contain all that might be said in elaboration. But in this particular hour there is an application of the force of the Number Two that is of the very first interest, and it is our purpose to center this study about that special interest. In pursuing this end it is necessary to consider especially certain phases of the Power of Two that are particularly connected with the Powers of Three.

We have pointed out how the bare power of two, out of relation to the power of three, brings about certain negative results that if left to themselves would ultimate in the pinching out of individualized consciousness. The power of three operates to prevent this culmination by synthesizing the diversified powers and thus changing conflict into co-operation. But with the action of Three we have not only not lost the operations of the principle of Duality, having simply curbed its negative tendency, but we have even introduced a new duality. This is the duality between three and two as such. The segregated consciousness of the bare two not only fights other points of segregated consciousness, but also struggles against that force which would bring it into the consciousness of its unity with all seeming opponents. It is right here that we have the abstract representation of the great war of the ages. It is the struggle between the Divine Self and the self caught in the illusion of Separateness. It is the real War of Armageddon, this war of Self against self.

We are told that the War of Armageddon is now on. In one sense this war is always being waged. Yet there are hours when it is waged with peculiar fury. And this doubtless is such an hour. But the real Armageddon will no more be seen at this time by him whose consciousness is posited exclusively on the objective plane of Being than it would be in times of outer calm. There is no more subtle and no more deadly conflict than this great war. But its subtlety hides its deadliness from him whose consciousness is caught in the swirl of outer events. One of the subtlest moves of the negative aspect of Two is to catch the consciousness by a struggle of separative aspect against separative aspect. By this means the negative Two forges at least one of its most powerful weapons against Three. The lesser self caught in the rush and turmoil of battle with other phases of the lesser self closes the ear of the heart to the voice of the Higher Self which seeks naught but to redeem the lesser. When the ear of the heart is closed, the Sword of the Spirit has not the power to redeem. That Sword then may become the retributive instrument of judgment, but for a season at least the power of the Kingdom of Two has shorn it of its power to redeem.

Doubtless we are, in an especial sense, in the midst of a great struggle between the Two and the Three. But that struggle will not be seen with the outer sight on the present battle-fields of the

nations. The conflict of those fields is but a strategic blind designed by the power of Two to hide the real war that lies in the heart of man. By attachment to victory on the outer fields defeat of the Higher Self in the inner battle becomes more likely. And on the other hand, the victory of the Higher in the inner battle will be marked by an equal desire for the extension of the sphere of activity of one's opponents as well as for one's own group. In fact, enemy and ally will exist no longer for the consciousness of such an one, for both will melt together in a common and equal brotherhood wherein the humanity and fine nature of each is equally trusted.

There are guiding differentia which, if followed, will guide us to the true battle-field and save us from the confusion of *Maya's* net. Some of these threads that guide aright are easily defined. One rule, never to be forgotten, is that the Warrior and his weapons are molded together. One implies the other. This is due in part to the positive action of the Number Two. On its positive side, Two holds together those things that belong together. Thus we know the essential nature that must attach to the weapons of the Warrior of Light, or he who fights in the Cause of Three; and, equally, we know the grand marks of the weapons of the Warriors of Darkness, or of the kingdom of the negative Two. The Warrior of Light may use in his battle only such means as will, in their innate operation, leave room for the self-expression of all phases of Being. He may use those weapons that will bring regeneration and those alone. The Warrior of Darkness uses the weapons of exclusiveness. He uses that which destroys those who stand in his road, so that he may have an expression which he denies to others. It is true that good motive may alleviate the severity of the innate action of these latter weapons, but it can only alleviate. The weapons of the Warrior of Darkness have a nature compelling them to bring about a result marked with darkness. The Light may later redeem that darkness, but it is a darkness that need never have been if the Weapons of the Warriors of Light alone had been used. It is a very sad mistake to suppose that one may safely fight the devil with his own weapons. Those weapons are part and parcel of the devil himself, and though one succeed in slaying a given expression of the devil by their use, yet in so doing he has prepared within himself a place for a new incarnation of that evil one. So the essential evil has not died but has simply shifted its ground and mayhap become stronger. No, the shortest and only sure road to victory for the All, in this War of Armageddon, is to use only the weapons of the Kingdom of Three. And these are only the weapons of a pure unselfish heart.

In the "Brother of the Third Degree" there is a symbolic portrait of the great war which throws a light on the methods of the conflict which belong to both. The symbol is in the form of a cube with a pyramid above it and connected to it only by a green thread. By this thread are two figures, one white, the other black. The white figure has no weapons but simply guards that thread with his unprotected bare arms. The black figure, with all the victorious forces of the lover nature expressed upon his face, is fighting with cutting, destroying weapons, seeking to sever the thread that the other is guarding. That thread is guarded only by the unprotected arms of the white one. As those arms are lacerated by the blows of the black figure, they are healed by the forces playing through the body from the inner world. But in all this conflict, this one never strikes a destructive blow at his opponent. All of this is very significant. The White one representing the synthesizing realm of the Three can do only those things that are compatible with the principle of the Unity of all things. Accordingly he cannot use any instrument which in its operation essentially denies the right of expression to any part of Being. He may function only with those forces that will serve to raise expression that would be exclusive into such that will be inclusive of all. Therefore these weapons

he may use are only the weapons of a pure heart that pours out a healing force of love from all the wounds of its body.

From what has been said, the important lesson to be brought out is, that in this great war between the three and the two, one of the most important marks by which we may know the different warriors is found in the methods they pursue. The Warrior of Light, or the Kingdom of Three, may employ only those methods that would work to redeem his opponent. The destroying forces of hate and exclusiveness belong only to the shadow side of two.

In general, it is out of place to apply the force of an abstract metaphysical discourse, such as belongs peculiarly to the field of Occult Mathematics, to a question of practical conduct. The chief work of this field is to formulate the grand principles that govern the movement of the Cosmos, within which all finite, concrete expression must be confined. But in a critical time, when confusion of the operation of principles is apt to occur, it seems right that from the standpoint of Occult Mathematics the clearest statement of the action of involved principles should be given so that individuals may have this assistance in the solution of practical moral questions. It is for that reason that we feel justified in laying so much stress upon a statement of the nature of the war between the segregating inverted force of Two and the synthesizing force of Three. We will close this discourse with one word more in this connection.

The Christ Principle corresponds to the principle that operates through Three. It is that which unites the extremes and holds them in an Unity. Now through the action of the duality between the Three and the Two, the action of the Christ Force arouses into activity the force of the anti-Christ. Thus in this day, when the coming of the *Avatar* is near at hand, we may expect the force of the anti-Christ to arise in peculiar power. So, while it is true that the coming into outer expression of the Christ Principle in the world must be marked by a house-cleaning or a clearing of old *Karmic* debts, it also calls into action an aggressive anti-Christ force that has, as its purpose, the closing of the door so that the manifestation of the Christ Principle in the world may be reduced to a minimum. Today there is action in the world, not alone the force of house-cleaning but that of forces that increase the power of the Dweller on the threshold. It is of the utmost importance that those who would help to prepare a way for the Avatar should not confuse these two kinds of forces. If this paper has offered something that will help to prevent such confusion, it will have served its prime purpose.