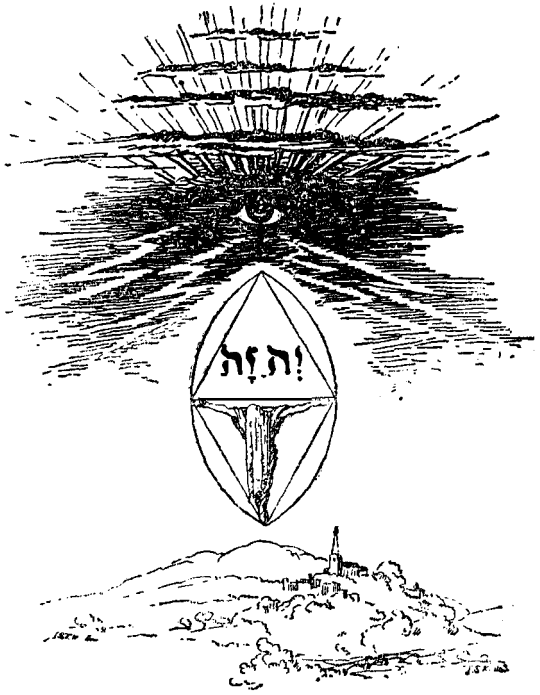
SCIENCE AND THE INFINITE



"THE MYSTERY OF THE APEX"

VIEW NO. 3

SCIENCE AND THE INFINITE

OR

THROUGH A WINDOW IN THE BLANK WALL

BY

SYDNEY T. KLEIN

SECOND IMPRESSION

LONDON
WILLIAM RIDER & SON, LIMITED
CATHEDRAL HOUSE, PATERNOSTER ROW, E.C.
1917

First published November 1912
Reprinted September 1917.

This electronic edition issued by Celephaïs Press,
somewhere beyond the Tanarian Hills
(Leeds, Yorkshire, England)
November 2003.

TO

THE RIGHT HON.

ARTHUR JAMES BALFOUR

PREFACE

IN venturing to prepare this little volume for the eyes of the reading public, I am fully aware of the difficulties of the subject and the inadequacy of the expressions I have been able to employ, but I have made the attempt at the request of those who have found consolation in some of the thoughts herein embodied; and the messages left by others before they passed away, embolden me to hope that many others may find in this volume some points of interest which will help them to appreciate better the "joys" which this life has for those who know how to look for them, and that perhaps others may even gain a clearer conception of that which awaits us beyond the Veil.

Many of us allow ourselves to be overwhelmed by the small worries and vexations of everyday life, clothing them with a reality quite disproportionate to their importance; we are too apt to look at them, as it were, through a powerful microscope, piling power upon power of magnification, until we have

made mountains out of mole-hills, whereas if we treated them at their true value we should look at them through a telescope, in the reverse direction, when they would appear not only trivial, but would be seen to be too remote to have any material effect on our lives.

The sub-title of this volume, and indeed its inception, arose from my lately coming in contact with one of those establishments which are doing for humanity what a mother's arms do for the child who is "sick unto death"—a beautiful home with cheerful rooms and cheerful nurses, where patients are tenderly cared for after severe operations, carried through by our most ferrous surgeons, some cases, alas, almost hopeless from the first. At the head of this establishment was one of those kindly self-abnegating personalities, whose loving sympathy and encouragement have comforted the dying and smoothed the path for many a weary pilgrim passing form this life to the next. With immense responsibilities on her shoulders, and after a day full of strenuous work, the head of this establishment would often sit through the night for hours by the couch of those whose lives could not possibly be prolonged for more than a few days. It was a few simple answers elicited by the questions brought to me form those poor sufferers, and the way such answers

seemed to calm anxieties connected with the fear of death and to render the impenetrable Veil more transparent, which suggested the title, "Through a Window in the Blank Wall"

I do not wish to lay claim to having made any startling discovery; similar thoughts, especially those concerning the non-reality of Time and Space, have no doubt occurred to others, but the whole problem "What is the Reality?" has been insistently pressing on me ever since I can remember, and I have tried to give here in simple colloquial language, without any attempt at rhetoric, the conclusions I have personally come to as to what is the Truth.

The study of ancient and modern philosophic theories is useful as showing how impossible it is, for even the greatest thinkers of any age, to grasp the Absolute with our understanding or to measure the Infinite with our finite units. The propounders of all these theories seem to me to be, without exception, looking in the wrong direction for the "Reality of Being"; they are all arguing from the standpoint of "Intellectualism" in a similar manner to that of the "Theologians" referred to in View Three. Our latest expositor of this, M. Henri Bergson, bases his theory upon "Life" being the Reality; this he postulates is a "flowing" in Time, and *Movement* therefore becomes for him the

Reality; and yet we know that Motion is but the product of Time and Space, and these are only the two modes or *limitations* under which our senses act and upon which our very consciousness of living depends. Surely the Absolute cannot be localised, must be Omnipresent, and therefore independent of Space —cannot have a beginning or end, must be Omniscient, and therefore independent of Time; these two unrealities can therefore have no existence in "Reality of Being." If, then, there is any truth in "Intuition," we have, in this theory, the Reality, "Life," not only limited by the unreal but actually dependent for its very existence upon those limitations! In these Views I have attempted, on the contrary, to show that Time and Space have no existence apart from our Physical Senses; they are the modes only under which we appreciate motion, or what we call physical phenomena, and as our conceptional knowledge is based upon our perceptional knowledge, our very consciousness of living is limited by Time and Space, and we must surely therefore look behind consciousness itself, beyond the conditioning in Time and Space for the Reality of Being, otherwise *physical motion*, the product of these two limitations, would become the Reality of Being.

I have also suggested reasons for looking

upon physical life as a mode of frequency, akin to Light, Electricity, Magnetism, Chemical Action, the Vibration of a Tuning Fork, or the Swing of a Pendulum, and therefore a transient phenomenon having to do only with the Race; Life can under these conditions only be looked upon as a reality in the same sense in which all other forms of energy or matter appear real to our finite senses—namely, as the shadows or manifestations of the Absolute on our limited plane of Consciousness.

However strongly I may be convinced—as I am—of the truth of my arguments, and however sure I may be that many others will not only agree with my conclusions, but will see that in "Introspection" rather than in "Intellectualism " lies the key to the Mystery, I do not wish to appear dogmatic in any of the suggestions contained in this volume; I am stating my own convictions, but at the same time I fully recognise that the presentation of the Absolute, with its infinite variety of aspects, must necessarily be different to every individual; we are all of the same genus, but each individual Ego is, as it were, a different species, and I do not therefore expect that my attempt to solve the Riddle of the Universe will appeal to all alike. It is, however, a true saying that "there is something to be learnt from every human being," and if I have by

these suggestions succeeded in augmenting the number of those who have already started on the true "Quest," and have helped, however imperfectly, to enrich some lives with the "joy" of knowing their oneness with the All-loving, my aim has indeed been attained.

SYDNEY T. KLEIN.

"HATHERLOW," REIGATE,
1*st June* 1912.

CONTENTS

SCIENCE AND THE INFINITE

VIEW ONE

CLEARING THE APPROACH

THE proof that the Human Race is still in its infancy may be seen in the fact that we still require Symbolism to help us to maintain and carry forward abstract thought to higher levels, even as children require picture books for that purpose. The Glamour of Symbolism, Rapture of Music, and Ideal of Art, which come to us in later years, had their beginnings when to the child every blade of grass was a fairy tale and a grass plot a marvellous fairy forest. The great aspiration of the Human Race is to gain a knowledge of the Reality, the Noumenon behind the phenomenon; but the fact that from infancy we have been accustomed to confine our attention wholly to the objective, believing that to be the reality, has surrounded us with a concrete boundary wall through which we can only at times, with difficulty, get transient glimpses of that which is beyond. It is only in

recent years that we have been able to realise that it is the Invisible which is the Real, that the visible is only its shadow or its manifestation in the Physical Universe, and that Time and Space have no existence apart from our physical senses, in short, that they are only the modes or limits under which those senses act or receive their impressions and by which they are necessarily rendered finite.

The difficulty is that our physical senses only perceive the surface of our surroundings, and that we have hitherto been looking at the Woof of Nature as though it were the glass of a window covered with patterns, smudges, flies, &c., comprising all that we call physical phenomena and which, when analysed in terms of Time and Space, produce the appearance of succession and motion. It requires a keener perception, unbounded by these limitations, to look through the glass at the Reality which is beyond. I propose then in a series of short views, through a window not hitherto unshuttered and in a direction which I believe has not before been attempted, to lead those of my readers who have the necessary aspiration, patience, and, above all, strenuous persistence, to a watch-tower, situated well above the mists and illusions of our ordinary everyday thoughts, whence they will find it possible to get a glimpse of a strange new country, and where those who have by practice once

attained to its clear perception, will be able to continue the study by themselves and thus get further insight into that wonderful region of Thought which I have called "True Occultism"—the knowledge of the Invisible which is the Real in place of the Visible which is only its shadow.

Let us first try and understand the conditions under which phenomena are presented to us. In our perception of sight, we find the greater the light, the greater the shadow; a light placed over a table throws a shadow on the floor, though not sufficient to prevent our seeing the pattern of the carpet; increase the light and the shadow appears now so dark that no pattern or carpet can be seen; not that there is now less light under the table hut the light above has to our sense of sight created or made manifest a greater darkness. Thus, throughout the Universe, as interpreted by our Physical Ego, we find phenomena ranging themselves under the form of positive and negative, the apparently Real and the Unreal

The Good	making	manifest its negative	Evil.
The Beautiful	,,	,, ,,	Ugly.
The True	,,	,, ,,	False.
Knowledge	,,	,, ,,	Ignorance.
Light	,,	,, ,,	Darkness.
Heat	,,	,, ,,	Cold.

But the negatives have no real existence. As in the case of light we see that the shadow is

only the absence of light, so the negative of Goodness, *i.e.* Evil, may in reality be looked upon as folly or wasting of opportunity for exercising the Good. Owing to their limitations our thoughts are based upon *relativity*, and it is hardly thinkable that we could, under lour present conditions, have any cognisance of the positive without its negative; we shall in fact see later on that it is by examining the Physical, the negative or shadow, that we can best gain a knowledge of the Spiritual, the positive or real.

The first step to a clear understanding of this, is to recognise that it is not we who are looking out upon Nature but that it is the Reality which is ever trying to enter and come into touch with us through our senses, and is persistently trying to waken within us a knowledge of the sublimest truths. It is difficult to realise this, as from infancy we have been accustomed to confine our attention wholly to the objective, believing that to be the reality,

Let us try and grasp this fact. If we analyse our sense of sight, we find that the only impression made on our bodies by external objects is the image formed upon the retina; we have no cognisance of the separate electro-magnetic rills forming that image, which, reflected from all parts of an object,

fall upon the eye at different angles, constituting form, and with different frequencies giving colour to that image; that image is only formed when we turn our eyes in the right direction to allow those rills to enter; and, whereas those rills are incessantly beating on the outside of our sense organ when the eyelid is closed, they can make no impression unless we allow them to enter by raising that shutter. It is not then any volition from within that goes out to seize upon and grasp the truths from Nature, but the phenomena are as it were forcing their way into our consciousness. This is more difficult to realise when the object is near to us, as we are apt to confound it with our sense of touch, which requires us to stretch out our hand to the object, but it is clearer when we take an object far away. In our telescopes we catch the rills of light which started from a star a thousand years ago and the image is still formed on the retina *now* although those rills are in fact a thousand years old and, invisible to our unaided eye, have been falling upon mankind from the beginning of life on this globe, trying to get an entrance to consciousness. It was, however, only when, by evolution of thought, the knowledge of optics had produced the telescope that it became possible not only for

that star to make itself known to us but to declare to us its distance, its size, and conditions of existence, and even the different elemental substances of which it was composed a thousand years ago. Yet, when we now allow its image to form on the retina, our consciousness insists on fixing its attention upon that star as an outside object, refusing to allow that it is only an image inside the eye and making it difficult to realise that that star may have disappeared and had no existence for the past 999 years, although in ordinary parlance we are looking at and seeing it there now.

I have referred above to the sense of touch; it is, I think, clear that the :first impression a child can have of sight must take the form of feeling the image on its retina, as though the object were actually inside the head, and it could have no idea that it was outside until, by touching with the hand, it would gradually learn by experience that the tangible outside object corresponded with the image located in the head; this is fully borne out by the testimony of men who, born blind, have, by an operation, received their sight late in life; in each case their first experience of seeing gave the impression that the object was touching the eye, and they were quite unable to recognise by sight an object such as a cup or plate or a round ball which they had

commonly handled and knew perfectly well by touch; in fact, the idea of an object formed by the sense of touch is so absolutely different to that formed by the sense of sight that it would be impossible without past experience to conclude that the two sensations referred to one and the same object. The image formed on the retina has nothing in common with the sense of hardness, coldness, and weight experienced by touch, the only impression on the retina being that of colour or shade, and an outline; it is, however, hardly conceivable that even the outline of form. would be recognised by the eye until touch had proved that form. comprised also solidity and that the two ideas had certain motions in common both in duration in Time and extension in Space.

Again, our senses of sight and hearing are alike based on the appreciation of frequencies of different rapidity; brightness and colour in light are equivalent to loudness and pitch in sound, but in sound we have no equivalent to perception of form. or situation in space; it gives us no knowledge of the existence of objects when situated at great distances, nor can movements be followed even at short distances without having material contact, by means of the air, with the object; sight indeed appears to have to do with Space- and sound with Time-perception. In examining Nature

by means of our senses we find we are so hemmed in by what we have always taken for granted and so bound down by modes of reasoning derived from what we have seen, heard, or felt in our daily life, that we are sadly hampered in our search after the truth. It is difficult to sweep the erroneous concepts aside and make a fresh start. In fact the great difficulty in studying the Reality underlying Nature is analogous to our inability to isolate and study the different sounds themselves which fall upon the ear, if our own language is being uttered, without being forced to consider the meaning we have always attached to those sounds.

Let us now go back to the contention that it is not we who are looking out upon Nature but that our senses are being bombarded from without; we are living in a world of continuous and multitudinous changes, and as our senses require change or motion for their excitation, without those changes we could have no cognisance of our surroundings, we should have no consciousness of living; but if we base our thought entirely on sense perception, taking for granted that Time and Space have reality instead of recognising that they are only modes or limits under which those senses act, the Wall will ever remain opaque to us. Let us try and make this clearer. If we analyse the impression we

receive from Motion, we find it is made up of the product of our two limitations, it is the time that an object takes to go over a certain space. We must come therefore to the conclusion also that Motion itself has no existence in reality apart from our senses. The result of not being able to appreciate this, is that the finiteness of our sense, caused by its dependence on Motion for excitation, surrounds us with illusions ; one of these illusions is what we call solidity or continuity of sensation. If you hold a cannon-ball in your hand, perception by the sense of touch tells you that it is continuous, or what is called solid and hard; but it is not so in reality except as a concept limited by our finite senses. A fair analogy would be to liken it to a swarm of bees, for we know that it is composed of an immense number of independent atoms or molecules which are darting about, and circling round each other at an enormous speed but never touching; they are also pulsating at a definite enormous rate; we can at will increase their motion by heat or reduce by cold; if our touch perception were sensitive enough we should feel those motions and should not have the sensation of a solid. We have a similar Case of limitation in our other senses, which we shall grasp better in another View through our Window. We can hear beats only up to fifteen in a second, beyond that number they give the

sensation of a musical or continuous sound. In our sense of sight we can see pulsations or intermittent flashes up to only six in a second, beyond that number they give the sensation of a continuous light; a gas jet, if extinguished and relit six times in a second, can be seen to flicker, but beyond that rate is to our sense of sight a steady flame. The effect may also be shown by making the top of a match red-hot; when stationary or moving slowly, it is a point of light, but, moved quickly, it becomes a continuous line of light.

Even apart from our senses we find Motion giving the characteristics of solidity: a wheel with only a few spokes, if rotated quickly enough, becomes quite impermeable to any substance, however small, thrown at it; a thin jet of water only half an inch in diameter, if discharged at great pressure equivalent to a column of water of 500 metres, cannot be cut even with an axe, it resists as though it were made of the hardest steel; a thin cord, hanging from a vertical axis, and being revolved very quickly, becomes rigid, and if struck with a hammer it resists and resounds like a rod of wood; a thin chain and even a loop of string, if revolved at great speed over a vertical pulley, becomes rigid and, if allowed to escape from the pulley, will run along the ground as a hoop.

Now with regard to this limit of time perception, which gives us the phenomenon of Solidity, I have lately been able to devise an arrangement which, acting as a microscope for Time, gives the sensation of an increase in sight perception up to several thousand units per second; it is based on the fact that though the eye can only see six times per second it can see for the one-millionth part of a second. An example of this is the well-known experiment of seeing a bullet in its flight; the bullet makes electrical connection resulting in a spark which illuminates the bullet when opposite the eye. The electrical spark exists only for the millionth of a second, and as the bullet in that time has no perceptible movement it. is seen standing absolutely still with all marks upon it quite visible to the eye. When Sight perception is increased up to the rate at which time may be said to flow for any particular object we apparently get into the reality, the permanent *now* where motion ceases to exist as a sensation. A tuning-fork, kept vibrating, by means of an electro-magnet, at 2000 times per second, may to our sense of sight be gradually slowed down and, optically, brought absolutely to a standstill, for as long as desired, and the smallest irregularity of its surface may be minutely examined, though it continues to be heard and felt

vibrating at that enormous rate. I have made several experiments in this direction, and some very curious facts connected with the sensation of Motion are brought to light by means of this increase in perceptive power. If the sense of sight is increased to 125 units per second, motion at the rate of one inch per second is barely visible; taking the common house-fly, whose wings vibrate about 400 times per second, its units of perception would appear to be about two-thirds of those beats, as I found it had no cognisance of Motion below two inches per second ; you can put your finger on any fly provided you do not approach it faster than the above rate, it turns its head up to look at your finger but can see no motion in it; if you approach at over three inches per second it will always fly away before you are within a foot. I found that a dragon-fly, whose wings vibrate about 200 times per second, had only half the number of unit perceptions of the fly and could apparently see motion at about one inch per second but not under. In the converse of the above we have then the principle of a Microscope for Time, somewhat similar to the Microscope for Space of our laboratories. If our perception were increased sufficiently we could slow down any motion for examination, however rapid; there would be no difficulty in following a lightning flash

or even arresting its visible motion for purposes of investigation without interfering with the natural sequence of cause and effect.

If, on the other hand, our perception were decreased below six times per second, all motion would be accelerated, until with perception reduced to one unit in twenty-four hours the sun would appear only as a band across the sky, and we could not follow its motion any more than, as we have seen, we could follow the point of a red-hot match. If perception were reduced far enough, plants and trees would grow up visibly before our eyes. But we must leave this subject now, as this and the Time Microscope will be treated in a later View.

Let us try and appreciate the fact that, under our present conditions, our conceptions of the immense and minute—namely, extension in Space, and that of quick and slow or duration in Time—are purely relative, and that from this arise those pseudo-conceptions which we call the infinitely extended and the infinitely lasting. Under our present limitations it is impossible for us to grasp the whole of any Truth, if we could do that, there would be no such mystery of Infinity to puzzle us; we could, as it were, see all around it, but that is again looking through another window. We are now considering *relativity.* If we cut off

the very end of the point of the finest needle, we get so minute a particle of steel that it is hardly visible to the naked eye, and yet we know that that small speck contains not only millions but millions of millions of what are called atoms, all in intense motion and never touching each other. Try and conceive how small each of these atoms must be, and then try and grasp the fact, only lately proved by the discovery of Radio-activity, that each of these atoms is a great family made up of bodies analogous to the planets of our solar system and whose rate of motion is comparable only to that of Light. This is not theory, it is fact clearly demonstrated to us by the study of Radio-activity. Curiously enough, we know more about these bodies than we do of the atom itself ; we actually know their size and weight and the speed with which they move. We do not yet know what is at the centre of this system, but we do know that each of these bodies is as far away from the centre as our planet is from the sun (93,000,000 miles), and as far from its neighbours as our planet is, *relatively to its size.* And now, for the purpose of grasping this subject of relativity, I want you to ask yourself whether it is conceivable that a world, so small as those bodies I are, could possibly be inhabited by sentient beings. Leaving you to form your own conclusion upon this point, I will ask you to

follow me down another path leading to the elucidation of the same subject.

If at this moment we and all our surroundings were reduced to half their size and everything were moving twice as quickly, we should absolutely have no cognisance of any change, neither could we possibly note any difference if everything were reduced to a hundredth part of the original size and were going a hundred times quicker; and even when reduced a thousand or a million times, or to such minuteness that the whole of our solar system with its revolving planets became no larger than one of those atoms in the needle point, and the whole of the starry universe therefore reduced to the size of the needle point, its millions of suns coinciding with the millions of planetary systems in that steel particle—our earth would still revolve round the sun, though no larger than one of those minute planetary particles and travelling at the rate of light, but we should still have no knowledge of any change, in fact, our life would go on as usual, though it was difficult a few minutes ago to think it conceivable that so small a globe could be inhabited by sentient beings.

Once more let us consider that the change is made in the direction of expansion in space and slowing down of Time; let all our surroundings be so enormously increased that

each of the atoms in the steel point became as large as our solar system and the steel point as large as the visible universe, each atom therefore taking the place of a star, and motion being reduced in proportion; it is still absolutely inconceivable that we could know of any change having taken place, though the length of our needle, which was at first, say, one inch, would now be so great that light, travelling 186,000 miles per second, would take 500,000 years to traverse its length, and the stature of each one of us would be so great that light would require over 36,000,000 years to travel from head to foot, and that 36,000,000 years would have to be multiplied 163,000,000 times, making 5860 millions of millions of years to represent the time that an ordinary *sneeze* would take under such conditions. And yet we have only gone towards the infinitely great exactly as far as we at first went towards the infinitely small, and it is still absolutely inconceivable that we could be conscious of any change, our everyday life would go on as usual, we should be quite oblivious to the fact that every second of time, with all its incidents and thoughts, had been lengthened to 5860 millions of millions of years. Do we not now begin to grasp the fact that immensity and minuteness in extension, and motion in duration, are figments only of our finite minds, that Time and Space have no objective

reality apart from our physical senses, that they are only the modes under which we receive impressions of our surroundings? With perfect perception we should know that the only Reality is the Spiritual, the Here comprising all Space and the Now all Time.

One more look through the window before we part, and we may see what I consider the greatest miracle in our everyday life: The Inner-self of each one of us, being part of the Reality or Spiritual, is independent of Space limitations and must therefore be *Omnipresent,* is independent of Time and therefore *Omniscient.* This inevitable deduction will be explained more fully in another View.

It is from this store of knowledge that our Physical Ego is ever trying to win fresh forms of thought, and, in response to our persistent endeavours, that Inner-self, from time to time, buds out a new thought; the Physical Ego has already prepared the clothing with which that bud must be clad before it can come into conscious thought, because, as Max Miiller has shown us, we have to form words before we can think; so does the Physical Ego clothe that ethereal thought in physical language, and by means of its organ of speech it sends that thought forth into the air in the form of hundreds of thousands of vibrations of different shapes and sizes, some large, some small, some quick, some slow,

travelling in all directions and filling the surrounding space; there is nothing in those vibrations but physical movement, but each separate movement is an integral part or thread of that clothing. Another Physical Ego receives these multitudinous vibrations by means of its sense organ, weaves them together into the same physical garment, and actually becomes possessed of that ethereal thought—an unexplained marvel, and probably the most wonderful occurrence in our daily existence, especially as it often enables the second Physical Ego to gain fresh knowledge from its own Real Personality. Now, in connection with this, consider the fact, already emphasized, that it is not we who are looking out upon Nature, but that it is the Reality which is ever trying to make itself known to us by bombarding our sense organs with the particular physical impulses to which those organs can respond, and, if we aspire to gain a knowledge of what is. behind the physical, it is clear that all our endeavours must be towards weaving these impulses into garments and then learning from them the sublime Truths which the Reality is ever trying to divulge to us.

VIEW TWO

THE VISION

"THY Will be done on Earth as it is in Heaven," is in true consonance with the old philosophic dictum that "Everything in heaven must have its counterpart on earth"; in other words, the Reality has all Its multitudinous manifestations, every noumenon its phenomenon, in the physical universe. If we now examine those traits of our surroundings which affect us most, and best help us to reach the highest level of abstract thought of which our nature is capable, we find that it is the recognition of the Beauty (comprising also the Good and the True) in everything, which constitutes the power held over our minds by what we may call the Glamour of Symbolism, the Rapture of Music, and the Ideal of Art. But this influence is still only *sensuous*, it does not carry us beyond the extension of that Wonderment and Enchantment which had their birth with our first visit to Fairyland. This is, I think, evident, as Beauty is not the Reality; it is only what may be called the sensuous expression of the Reality or Spiritual on the physical

plane. Although we have no words to express, nor indeed minds to grasp, the wonders and glories of that which is behind the Veil, it is possible for some of us to get a glimpse of it through our Window, and to those the following pages may be helpful, but to others the Wall will remain blank; and, here at the commencement, I should like to warn those who have not been through a certain experience, to which I shall refer, that no words of mine will open the Window for them; at the same time it is probable that many of my readers, who think at this stage that they have no knowledge of the subject of this View, will, as we proceed, recognise in the view through the Window something they have experienced more than once in their lifetime, and to these I address myself.

Let us first try to understand what we know concerning ourselves. The longer one lives and the more one studies the mystery of "Being," the more one is forced to the conclusion that in every Human Being there are two Personalities, call them what you like—"the *Real* and its Image," "the *Spiritual* and its Material Shadow," or "the *Transcendental* and its Physical Ego." The former in each of these duads is, as referred to in our first View, not conditioned in Time and Space, is independent of Extension and Duration, and must therefore be Omnipresent and Omnis-

cient, whereas the latter, being subservient to Time and Space, can only think in finite words, requires succession of ideas to accumulate knowledge, is dependent on perception of movements for forming concepts of its surroundings, and, without this perception, it would have no knowledge of existence.

Let us go back into the far distant past, before the frame and brain of what we now call the genus Homo was fully developed: he was then an animal pure and simple, conscious of living but knowing neither good nor evil; there was nothing in his thoughts more perfect than himself; it was the golden age of innocency; he was a being enjoying himself in a perfect state of nature with absolute freedom from responsibility of action. But, as ages rolled on, under the great law of evolution, his brain was enlarging and gradually being prepared for a great and wonderful event, which was to make an enormous change in his mode of living and his outlook on the future. As seeds may fall continually for thousands of years upon hard rock without being able to germinate, until gradually, by the disintegration of the rock, soil is formed, enabling the seed at last to take root; so for countless ages was the mind of that noble animal being prepared until, in the fulfilment of time, the Spiritual took root and he became a living soul. The change was marvellous; he was

now aware of something higher and more perfect than himself, he found that he was able to form ideals above his ability to attain to, resulting in a sense 0f inferiority, akin to a ”Fall”; he was conscious of the difference of Right and Wrong, and felt happy and blessed when he followed the Good, but ashamed and accursed when he chose the Evil; he became upright in stature, and able to communicate his thoughts and wishes to his fellows by means of language; and by feeling his freedom to choose between the Good, Beautiful, and True on one hand, and the Evil, Ugly, and False on the other, he became aware that he was responsible and answerable to a mysterious higher Being for his actions. This at once raised him far above other animals, and he gradually began to feel the presence within him of a wonderful power, the nucleus of that Transcendental Self which had taken root, and which, from that age to this, has urged Man ever forward first to form, and then struggle to attain, higher Ideals of Perfection. As a mountaineer who, with stern persistence, struggles upward from height to height, gaining at each step a clearer and broader view, so do we, as we progress in our struggle upwards, toward the understanding of Perfection, ever see more and more clearly that the Invisible is the Real, that the visible is only its shadow, that our Spiritual

Personality is akin to that Great Reality, that we cannot search out and know that Personality; it is not an idea, it cannot be perceived by our senses, any more than we can see a sound by our sense of sight or measure an Infinity by our finite units; all we can so far do is to feel and mark its effect in guiding our Physical Ego to choose the real from the shadow, the plus from the minus, receiving back in some marvellous mode of reflex action the power to draw further nourishment from the Infinite. As that Inner Personality becomes more and more firmly established, higher ideals and knowledge of the Reality bud out, and, as these require the clothing 0f finite expressions before they can become part of our consciousness, so are they clothed by our Physical Ego and become forms of thought; and, although the Physical Ego is only the shadow or image, projected on the physical screen, of the Real Personality, we are able, by examining these emanations and marking their affinity to the Good, the Beautiful, and the True, to attain at times to more than transient glimpses of the loveliness of that which is behind the veil. As in a river flowing down to the sea, a small eddy, however small, once started with power to increase, may, if it continues in midstream, instead of getting entangled with the weeds and pebbles

near the bank, gather to itself so large a volume of water, that, when it reaches the sea, it has become a great independent force; so is each of us endowed, as we come into this life, with a spark of the Great Reality, with potential force to draw from the Infinite in proportion to our conscientious endeavours to keep ourselves free from the deadening effects of mundane frivolities and enticements, turning our faces ever towards the light rather than to the shadow, until our personality becomes a permanent entity, commanding an individual existence when the physical clothing of this life is worn out, and for us all shadows disappear.

If man became a conscious being on some such analogous lines as indicated, it is clear that he is, as it were, the offspring of two distinct natures, and subject to two widely separated influences; the Spiritual ever urging him towards improvement in the direction of the Real or Perfect, and the Physical or Animal instincts inviting him in the opposite direction. These latter instincts are not wrong in themselves, in a purely animal nature, but are made manifest as urging him in the direction of the shadow or Imperfect when they come in contact, and therefore in competition, with the Spiritual. Neither the Spiritual nor the Physical can be said to possess Free-will; they must work in opposite directions, but

this competition for influence over our actions provides the basis for the exercise of man's Free-will—the choice between progression and stagnation. The Spiritual influence must conquer in the long run, as every step under that influence is a step towards the Real and can never be lost; the apparent steps in the other direction are only negative or retarding, and can have no real existence, except as a drag on the wheel which is always moving in the direction of Perfection, thus hindering the process of growth of the Personality.

The stages in development of the Physical Ego and its final absorption in the Transcendental may perhaps be stated as follows—

The Physical Ego loquitur:

" I become aware of being surrounded by phenomena, I will to see—I perceive and wonder what is the meaning of everything—I begin to think—I reflect by combining former experiences—I am conscious that I am, and that I am free to choose between Right and Wrong, but that I am responsible for my actions to a Higher Power; that what I call 'I am' is itself only the shadow, or in some incomprehensible sense the breathing organ, of a wonderful divine Afflatus or Power which is growing up within, or in intimate connection with me, and which itself is akin to the Reality. Owing to my senses being finite I cannot with my utmost thought

form a direct concept of that power, although I feel that it comprises all that is good and real in me, and is in fact my true personality; I am conscious of it ever urging me forward towards the Good, Beautiful, and True, and that each step I take in that direction (especially when taken in opposition to the dictates of physical instincts) results in a further growth of that Transcendental Self. With that growth I recognise that it is steadily gaining power over my thoughts and aspirations. I learn that the whole physical Universe is a manifestation of the Will of the Spiritual, that every phenomenon is as it were a sublime thought, that it should be my greatest individual aspiration to try to interpret those thoughts, or when, as it seems at present, our stage in the evolution of thought is not far enough advanced, I should during my short term of life do my best to help forward the knowledge of the Good, Beautiful, and True for those who come after. As I grow old the Real Ego in me seems to be taking my place, the central activity of my life is being shifted, as I feel I am growing in some way independent of earthly desires and aspirations, and, when the term of my temporary sojourn here draws to a close, I feel myself slackening my hold of the physical until at last I leave go entirely, and my physical clothing, having fulfilled its use, drops off and passes away, carrying with

it all limitations of Time and Space. I awake as from a dream to find my true heritage in the Spiritual Universe."

If we try to form a conception of the stages of growth of the Transcendental Self it would, I think, be somewhat as follows:

The first consciousness of the Spiritual entity would be . .	I know that Love is the Summum Bonum.
As it became nourished it would be	I love.
Then	I love with my whole being.
Then	I know that I am part of God and God is Love.
And lastly	I am perfected in Loving and Knowing.

And the above is the best description I have been able to formulate of the development of the Mystical Sense by means of which we can get a view of the Reality through our Window. I will try to give my own experience of this, which will, I know, wake an echo in other hearts, as I have met those who have felt the same. From a child I always had an intense feeling that Love was the one thing above all worth having in life, and, as I grew older and became aware that my real self was akin to the Great Spirit, at certain times of elation or

what might be called a kind of ecstasy, I had an overpowering sense of longing for union with the Reality, an intense love and craving to become one with the Al1-Ioving. When analysed later in life this was recognised as similar in kind, though different in degree, to the feeling which, when in the country, surrounded by charming scenery, wild flowers, the depths of a forest glade, or even the gentle splash of a mountain stream, makes one always want to open one's arms wide to embrace and hold fast the beautiful in Nature, as though one's Physical Ego, wooed by the Beautiful which is the sensuous (not sensual) expression of the Spiritual, longed to become one with the Physical, as the Personality or Transcendental Ego craves to become one with the Reality. It is the same intense feeling which makes a lover, looking into the eyes of his beloved, long to become united in the perfection of loving and knowing, to be one with that being in whom he has discovered a likeness akin to the highest ideal of which he himself is capable of forming a conception.

As in heaven, so on earth the Physical Ego, though only a shadow, has in its sphere the same fundamental characteristic craving as the Transcendental Personality has for that which is akin to it, and it is this wonderful love that, as the old adage says, makes the world go round. It is the most powerful

incentive on earth, and is implanted in our natures for the good and furtherance of the race; it is, in fact, the manifestation on the material plane of that craving of the Inner self for union with, and being perfected in loving and knowing, that Infinite Love of which it is itself the likeness. If we can realise that everything on the physical plane is a shadow, symbol, or manifestation of that which is in the Transcendental, the Mystica1 Sense, through contemplating these as symbols, enables us at certain times, alas! too seldom and fleeting in character, to get beyond the Physical; but those of my readers who have been *there* will know how impossible it is to describe, in direct words, which would carry any meaning, either the path by which the experience is gained or a true account of the experience itself. I will try, however, and I think I may be able to lead my readers, by indirect inductive suggestion, to a view of even these difficult subjects, by using the knowledge we have already gained in our first view through this Window. If an artist were required to draw a representation of the Omniscient Transcendental Self, budding out new forms of thought in response to the conscientious efforts of, and the providing of suitable clothing by, the Physical Ego, as referred to in View No. I, he would be obliged to make use

of symbolic forms, and I want to make it quite clear that the description I am attempting must necessarily be clothed in symbolic language and reasoning, and must not be taken as in any way the key by which the door of "the sanctuary" may be opened; it is only possible by it to help the mind to grasp the fact that there is a Window through which such things may be seen, the rest depends upon the personality of the seer.

Now bear in mind that it is not we who are looking out upon Nature, but that it is the Reality, which, by means of the physical, is persistently striving to enter into our consciousness, to tell us what? *Θεὸς ἀγαπη ἐστιν* (God is Love). As in Thompson's suggestive poem, "The Hound of Heaven"—the Hidden which desires to be found—the Reality is ever hunting us, and will never leave us till He has taught us to know and therefore to love Him, and, as seen in our first view, the first step is to try to see through the woof of nature to the Reality beyond. To this may also be added the attempt to hear the "silence" beyond the audible. Try now to look upon the whole "visible" as a background comprising landscape, sea, and sky—we shall get help in this direction in a later View—and then bring that background nearer and nearer to your consciousness. It requires practice, but it can be done; it may help you if you remember the

fact that the whole of that visible scene is actually depicted on the *surface* of your retina and *has no other existence for you*. The nearer you can get the background to approach, the more clearly you can see that the whole physical world of our senses is but a thin veil, a mere soap film, which at death is pricked and parts asunder, leaving us in the presence of the Reality underlying all phenomena. The same may be accomplished with the "audible," which is indeed part of the same physical film, though this is not at :first easy to recognise. As pointed out in View No.1, there is little in common between our sense of sight and hearing; but the chirp of birds, the hum of bees, the rustle of wind in the leaves, the ripple of a stream, the distant sound of sheep bells, and lowing of cattle form a background of sound which may be coaxed to approach you; the only knowledge you have of such sounds is their impression or image on the flat tympanum of your ear; they have *no other existence for you*; and again you may recognise that the physical is but a thin transient film. With the approach of the physical film all material sensation becomes as it were blurred, as near objects become when the eye looks at the horizon, and gradually escapes from consciousness.

I have tried in the foregoing to suggest a method by which our Window may be un-

shuttered; it has necessarily been only an oblique view and clothed in symbolic phraseology, but those who have been able to grasp its meaning will now have attained to what may be called a state of *self-forgetting*, the silencing or quieting down of the Physical Ego; sight and sound perceptions have been put in the background of consciousness, and it becomes possible to worship or love the very essence of beauty without the distraction of sense analysis and synthesis or temptation to form intellectual conceptions.

We are now prepared to attempt the last aspect of our view—namely, the description of what is experienced when the physical mists have been evaporated by the Mystical Sense. Again we find that no direct description is possible, language is absolutely inadequate to describe the unspeakable, communications have to be physically transmitted in words to which finite physical meanings have been allocated. The still small voice which may at times of Rapture be momentarily experienced in Music, is something much more wonderful than can be formed by sounds, and this perhaps comes nearest to the expression necessary for depicting the vision of the soul; but it cannot be held or described, it is quickly drowned by the physical sense of audition. As the Glamour of Symbolism can only be transmitted to one who has passed

the portal 0f Symbolic Thought. the Rapture of Music can only be truly understood by one who has already experienced it, and the Ideal 0f Art requires a true artistic temperament to comprehend it, so it is, I believe, impossible to describe, with any chance of success, this wonderful experience to any but those whom Mr. A. C. Benson, in his *Secret of the Thread of Gold*, very aptly describes as having already entered "the Shrine." Those who have been *there* will know that it is not at all equivalent to a vision, it is not anything which can be seen or heard or felt by touch; it is entirely independent 0f the physical senses; it is not Giving or Receiving, it is not even a receiving of some new knowledge from the Reality; it has nothing to do with thought or intellectual gymnastics; all such are seen to be but mist. The nearest description I can formulate is :—A wondrous feeling of perfect peace;—absolute rest from physical interference;—perfect contentment;—the sense of Being-one-with-the-Reality, carrying with it a knowledge that the Reality or Spiritual is nearer to us and has much more to do with us than the Physical has, if we could only see the truth and recognise its presence;—that there is no real death;—no finiteness and yet no Infinity;—that the Great Spirit cannot be localised or said to be anywhere, but that everywhere is God;—that the whole of what we call

Creation is an instantaneous Thought of the Reality;—that it is only by the process of analysing in Time and Space that we imagine there is such a thing as succession of events;—that the only Reality is the *Spiritual*, the *Here* embracing all Space and the *Now* embracing all Time.

How few of us who are now drawing towards the end of our sojourn here, have not, at certain times during our lives, experienced something akin to what I have tried to put before you in the above! Does not a particular scent, a beautiful country scene, a phrase in music, the beauty or pathos in a picture, symbolic sculpture in a grand cathedral, or even a chance word spoken in our hearing, every now and then waken in our innermost consciousness an enchanting memory of some wonderful happy moment of the past when the sun seemed to have been shining more brightly, the birds singing more merrily, when everything in nature seemed more alive, and our very beings seemed wrapped up in an intense love of our surroundings? On those occasions we were not far from seeing behind the veil, though we did not recognise it at the time; but when we now look back, with experience gained by advancing years, and consider those visions of the past, we cannot help seeing that the physical film was to our eyes more transparent

at those times, and the very joy of their remembrance seems to be giving us a prescience of that which we shall experience, when for each one of us the physical film is pricked and passes away like a scroll.

VIEW THREE

MYSTICISM AND SYMBOLISM

"WHO can doubt that the Mystics know more than the Theologians, and that the Poets know more than the Scientists? for this inner apprehension is surely the highest and truest kind of Knowledge." Such were the words written to me lately by a clergyman of great learning and of unimpeachable orthodoxy, whose mature knowledge of the Higher Mysteries has been gained by a life-long study of the Divine. In View No.1 we saw that the first step towards opening our Window, was to grasp the fact that it is not we who are *looking out* upon Nature, but that it is the Reality which is ever trying to enter and to *come into* touch with us, through our senses, and is persistently trying to wake within us a knowledge of the sublimest truths: but this has not yet been appreciated by the Theologian; he is looking *outwards* instead of *inwards*, and asks the question, based on *intellectual* conception, in the form "Can I find out the Absolute so that I may possess Him ?" and the answer ever comes back, "*No*, because I

am trying to storm the *Sanctuary* of the Unthinkable, the Infinite, by means of a Ladder which cannot reach beyond our finite conceptions, and can deal therefore only with the shadows, cast by the outlying ramparts, upon our physical plane." An example of this is surely seen in the lecture lately delivered by the Bishop of Oxford (Dr. Gore) to the University of Oxford (13th February 1912, reported in the *Guardian* of 16th February), when he made the statement that the greatest difficulty we have is to recognise that the Absolute is a God of Love. His exact words were: "I believe that there are a great many of us who know, perhaps from bitter experience, that whatever difficulties there are about religious belief are difficulties about believing in a God of Love; whatever is our experience, and however sunny is our disposition. any steady thinking will make it apparent that thought, apart from the Christian revelation, presumed and accepted, or reflected unconsciously, has never got at it, and even after it has been in the world, thought is continually finding it hard to retain the idea of God the Creator, or the truth that God is Love, partly owing to the limitations of human thinking, partly, and even more, owing to the experience of man and of nature."

On the other hand the Mystic, with *introspection*, asks the question in the form "Can

the Absolute find me out and possess me and thus make me feel that that which is within me is akin to, is, in fact, a part of Him and that I am possessed thereby?" and the answer ever comes back from those who are on the true Quest:—"*Yes;* because the Unthinkable, the Hidden which desires to be found, is ever trying to come into our Consciousness to waken the knowledge that His *Sanctuary,* or what is called the Kingdom of Heaven, is within us, that we are not an external but an internal creation of the All-loving." Such a realisation is, as pointed out in "The Vision," far above Analysis and Synthesis or Intellectual gymnastics, which can deal only with the finite and are seen to be but Mist. How many valuable thoughts are wrecked and lost from our inability to formulate and describe them intellectually, even in our own consciousness. We are too apt to lay the blame upon, and to doubt, the Truth of those conceptions, because we are unable to find words to express them; the very act of attempting to analyse such thoughts in Time and Space destroys our power of carrying them to higher levels. Those who have once realised that the knowledge of the Absolute is the true Divine Life within us, can, as we have seen, at certain times and under certain conditions, experience that wonderful joy of perception by means of what I have called the Eye of the

Soul; but that is missed by those who are always asking questions, and arguing, about what that knowledge consists in; the command "Seek and ye shall find, knock and it shall be opened unto you, ask and it shall be given you," was not meant for the intellect but for the Heart, not for logical controversy but for inward discernment, not for physical enjoyment but for the nourishment of the Transcendental Ego. All things *may* be possible to him that believeth, but how much more is this true of him who, as referred to in View No. 2, is perfected in "Loving and Knowing." The nearer we get to that consciousness of Being - one - with - the - Reality, the more we see and can meditate upon the wonderful "joy" which permeates all creation; but without that consciousness it is invisible, and the world is dark and evil and unloving, and to many, alas! appears more the handiwork of a Devil than of a God of Love.

Mysticism is not, as the man in the street generally thinks, the study of the "Mysterious," but is the attempt to gain a knowledge of the Reality, the ultimate Truth in everything, especially the perception of that wonderful Transcendental Power which is growing up within, or in close connection with, each one of us. The study of the Physical Sciences, as also of the various forms of Religion around us, is useful and fascinating in the

domain of "Intellectualism," but does not take us far towards the goal of our aspirations. I shall, however, attempt to show, in my next View, that by examining the phenomena of Nature and realising that they are symbols only of the Noumenon, the Reality, which is behind them, it is possible to reach a point where we may even feel that we are thinking, or having divulged to us, what may be called the very thoughts of the Absolute. We shall see that this can only be accomplished by first recognising that the Invisible is the Real, that the visible is only its shadow, that all our surroundings are but the images, or outlines, of the Reality cast on the Physical plane of our Senses; to accomplish this, we have to understand the use of *Symbolic* Thought for sustaining and carrying conceptions to a higher level; because, as already explained, we can only express and, indeed, think of the Invisible or Infinite under terms of the Visible or Finite. Let me give you a glimpse at what may be called the "Glamour of Symbolism " ; it is difficult to explain to those who have not yet thought of or felt it, but the following may be helpful :

Think of the loveliest story or poem you have ever read, the most entrancing music you have ever heard, or the most beautiful paintings you have ever seen, and think how, at the end, you experienced a wonderful glow of

enchantment with the concept as a whole, apart from specialising any particular character or event in the story, phrase in the music, or subject in the pictures; then do the same with one of those wonderful cathedrals of the twelfth to fourteenth centuries, the epoch of that beautiful Gothic style which I shall show was founded upon the highest mystical form of Symbolism possible to those who lived at the then zenith of Mystical Thought in the history of the world. The number of cathedrals built during those three centuries was so prodigious that, without the documentary evidence which we have, it would be absolutely incredible. Every part of those buildings, even to the smallest decorations, was, as shown by any of the old writers on Religious Symbolism, such as Durandus, planned to symbolise some beautiful thought, aspiration, tradition, or religious belief. The highest Thinkers, Artists, Poets, Philosophers, and Mystics in those centuries became Architects, and, in pure contemplation of and love for the Divine, helped to beautify design by giving up their lives and energies to the work without reward. It was, in fact, at that period the surest means by which they could record their ideals and aspirations. Before the advent of the printing press, with its facilities for spreading knowledge broad- cast, they appreciated that Tectonic Art and Iconography were the means by which they

could best permanently record and teach their aspirations to the masses. Every beautiful thought found its expression in some symbol of artistic design. Each Cathedral was, in fact, a beautiful complete *story*, and, when this has been fully grasped, the enchantment of the whole, the thread of gold running through the whole of that wonderful pile, is what may be called the Glamour of Symbolism.

For the last 400 years, Archæologists, Architects, and others interested in the history of Tectonic art, have been trying without avail to discover what is called "the lost secret of Gothic Architecture"; even Sir Christopher Wren had a try and expressed his opinion that it was lost for ever. They were all looking in the wrong direction, confining themselves to the mists of physical intellectual perception, and could not get beyond that limited range of thought. I propose now, in illustration of this View, to show what this secret was. It has the making of a fascinating Romance; it is the most wonderful example of what I will call "the Evolution of Thought as depicted by Human strivings after the Transcendental in Mediæval Mysticism." I shall give it in a brief form, touching only on those essential points which require a very slight knowledge of Geometry, but those interested in the subject may refer to *Ars Quatuor Coronatorum* (vol. xxiii., 1910), where

I have given the whole subject, *in extenso*, under the title "Magister Mathesios."

To understand the subject it is necessary .to recognise fully the place Geometry held, not only among Mediæval Builders, but also in Classical times; it was recognised in those early times as the head of all the Sciences, and was the A, B, C of Hellenic Philosophy. Come back with me 2300 years, to the time when the "Greek Age of Reason" was at its zenith, and Plato, the greatest of the philosophers, was teaching at Athens, working thus, let it be known to his honour, solely for the love he bore to science, for he always taught gratuitously. What qualification was required of those who attended his Academy? Look up over the porch, and you will see written in large capitals these words :

ΜΗΔΕΙΣ ΑΓΕΩΜΕΤΡΗΤΟΣ ΕΙΣΙΤΩ
ΜΟΥ ΤΗΝ ΣΤΕΓΗΝ.

"Let no one who is ignorant of Geometry enter my doors."

At the root of Socratic teaching was the idea that wisdom is the attribute of the Godhead, and Plato, for twenty years the companion and most favoured pupil of Socrates, was imbued with that doctrine, and, having arrived at the conclusion that the impulse to find out TRUTH was the necessity of intellectual man, he saw in Geometry the key-

stone of all Knowledge, because, among all other channels of thought, it alone was the exponent of absolute and undeniable truth. He tells us that "Geometry rightly treated is the Knowledge of the Eternal"; and Plutarch gives us yet another instance of Plato's teaching concerning this subject, in which he looks upon God as the Great Architect, when he says, "Plato says that God is always geometrising." Holding, therefore, as Plato did, that God was a great Geometer, and that the aim of philosophy was the acquisition of a knowledge of the Eternal, it is natural that he should make a knowledge of Geometry imperative on those wishing to study philosophy. This was continued also by those philosophers who succeeded Plato in the management of the Academy, as we are told that Zenocrates turned away an applicant for admission, who knew no geometry, with the words :

ποεύου, λαβὰς γὰρ οὐκ ἔχεις τῆς φιλοσοφίας.

"Depart, for thou hast not the *grip* of philosophy."

In connection with the idea that God was a Geometer, must be taken the contention held by the Egyptians, and after them the Greeks and Arabs, that the Right-Angled Triangle symbolised the nature of the Universe; it was called the law of the three

squares, because in every Right-Angled Triangle, as expounded by the Pythagorean Theorem, the squares, formed on the two sides containing the Right Angle, must together be exactly equal to the square on the third side, whatever the shape of the triangle may be. The Right Angle at an early date gave its name to the odd numbers, which were called, by the Greeks, gnomonic numbers, as personifying the male sex, and the Right-Angled Triangle was also called the Nuptial Figure, or Marriage, the Pythagorean Theorem receiving the name, *τὸ θεώρημα τὴς νύμφες* (the Theorem of the Bride). Plutarch, in his *Osiris and Isis,* tells us in explanation of this, "The Egyptians imagined the nature of the Universe like this most beautiful triangle, as Plato also seems to have done in his work on the *State,* when he sketches the picture of Matrimony under the form of a Right-Angled Triangle. That triangle contains one of the perpendiculars of three, the base of four, and the hypotenuse of five parts, the square of which is equal to the squares of those sides containing the right angle. The perpendicular (three) is the Male, Osiris, the originating principle (*ἀρχή*) ; the base (four) is the Female, Isis, the receptive principle (*ὑπδοχή*) ; and the Hypotenuse (five) is the offspring of both, Horus, the product (*ἀποτέλεσμα*)." The central feature of this

triangle, upon which its property is based, is the Right Angle. The Greeks gave to this Right Angle the name of *Gnomon* (meaning Knowledge), and it has ever since been, under the form of a carpenter's ..square," the emblem or symbol of an Architect, the Master Mason, as personifying the Great Architect of the Universe—namely, He who has the knowledge of Geometry; and, as the Right-Angled Triangle represented the Universe, it was upon the *perfection* of this Gnomon, or knowledge, that the very existence of the Universe depended, because the law of the three squares only holds good when that angle is perfect.

The Secret handed down in the Craft, from Architect to Architect, was how to form a perfect right angle, or, as it was called, the "Square," without possibility of Error, and this I have called "the Knowledge of the Square." Vitruvius, who, at the beginning of our Era, wrote his thesis on Tectonic art, which is still the text-book of Architecture for Ancient buildings, says Pythagoras taught his followers to form a gnomon, or square, as follows: "Take three rods, of three lengths, four lengths, and five lengths long; with these form a triangle, and, if each rod be squared, you have 9, 16, and 25, and the areas of the two former will be equal to the latter."

Now let us come to the closing years of the tenth century. What a strange condition of the building craft was to be seen all over Europe; not a church was being built, nor had been built, for the last twenty years; the thousand years after Christ was drawing to its close, everybody was waiting for, and expecting, the world to come to an end; no new undertakings were begun. How much money went into the hands of the Monasteries and other Religious Houses, as peace offerings for the future welfare of the givers, nobody can say; it was probably enormous. When, however, the eleventh century was well started and the crisis was over, churches were built on a large scale, as shown by the numerous remains we have of Norman buildings of the last half eleventh century, and building was probably at its height about A.D. 1140 to 1150; but at this period an extraordinary thing happened. Hitherto the arches in the Norman style were round-headed and their columns enormously thick to carry them; but suddenly the style changed into the beautiful Gothic all over Europe. No single country can claim precedence, it was almost simultaneous; churches half finished in the round style were not only completed in the pointed, but had parts already built altered to the new style. What, then, determined this sudden change, resulting in a wonderful accession of

beauty to Architectural design? We must go to the Monasteries and Religious Houses to find the explanation. These Houses had become the Patrons of Masonry, the providers of the funds for building Cathedrals, &c.; it naturally followed that, growing up alongside the Operative Science, there was a Religious symbolism being gradually formed which attached itself specially to the tools used by Masons, and thus formed the basis of Moral teaching—"to act on the Square," "to keep within the bounds of the Compasses," "to be Level in all your dealings," &c., &c. A wonderful, new, and Mystical form of Symbolism was opened to them with the advent of Geometry. The text-book of Geometry was unknown throughout the whole of Europe, omitting Spain, from the sixth to the beginning of the twelfth century; it was, as I have pointed out, well known in Greece before our Era, and continued to be so up to about the sixth century A.D. In the fourth century lived the Greek, Theon of Alexandria, so well known for his edition of Euclid's Elements, with notes, from which all Greek MSS. which first came to light in the sixteenth century were taken, being entitled *ἐκ τῶν θεώνος συνουσιῶν*, "from Theon's Lectures," and which he probably used as a text-book in his classes; but these MSS. had all been lost before the seventh century, and were not recovered again until the sixteenth

century, when Simon Grynæus, the greatest Greek scholar on the Continent, and companion of Melancthon and Luther, discovered a copy in Constantinople. Meanwhile, Theon's edition had been translated into Arabic, and thus preserved by the Mohammedans, and it was only at the beginning of the twelfth century that Athelard of Bath, who had been travelling in the East, came to study at Cordova, in Spain, and there found the Arabic MSS. of Euclid ; these he translated in to Latin, and this translation must have come into the hands of the patrons of the building craft at the very time when the Gothic style had its origin; it was the only Latin translation known in Europe, and was, some centuries later, the text-book of the first printed edition of Euclid.

The Operative Masons had always formed their Right-Angled Triangles by means of mundane measures of 3, 4, and 5 units to each side respectively, as was done by the Harpedonaptæ of Egypt 5000 years ago, and 2500 years later by Pythagoras, and this same method continues to be used to this day; but to those of a religious turn of mind, who had only lately become conversant with Euclid, and looked upon Geometry not only as the height of all learning, but, as they progressed in the knowledge of its bearing on the Science of. building, actually made it synonymous with Tectonic Art (the old MSS. which have

come down to us from that time invariably state that "at the head of all the Sciences stands *Geometry which is Masonry*"), there must have come a wave of wonderful enthusiasm when they first discovered that the Geometrical way of creating a Right Angle, as given in Euclid I. ii., was by means of an Equilateral Triangle, by joining the Apex with the centre of the base. This Equilateral Triangle was the earliest symbol we know of the Divine *Logos* in connection with that wonderful figure the Vesica Piscis; and as the Bible declared that the Universe was created by the Logos (the Word), so the Square which represented the Universe was naturally created by means of the Equilateral Triangle. A great mystery this must have appeared to those who, like the Hellenic philosophers, postulated that everything on Earth has its counterpart in Heaven, and who, in their religious mysticism, were always looking for signs of the transcendental in their temporal surroundings.

But in what awe and reverence must they have held Geometry, when they further found that the Equilateral Triangle, representing the Logos, was itself generated, as shown in the *first* Problem of Euclid, upon which the whole Science of Geometry was therefore based, by the intersection of two Circles! These two Circles were held by the Greeks,

at the beginning of our Era, to represent the Past and Future Eternities generating the Logos; but the whole figure (Euclid I. i.) was at the time we are now dealing with looked upon by Mediæval Architects as representing the Three Divine *personæ,* and that part, or *cavity,* of the figure which is bounded by the Arcs of the two circles, and which takes to itself one-third of each of the two generating circles (making its perifera exactly equal with that remaining to each of the two circles, all three therefore being *co-equal),* and in which the Equilateral Triangle is formed *(vide* frontispiece), was naturally held by the Mediæval Architects, and indeed from earliest times, as the most sacred Christian Emblem—namely, that of *Regeneration* or " New Birth."

The Cavity is evidently referred to in the Mystical Gospel of St. John (iii. 16), in the question by and answer to Nicodemus, and it was the eye of the needle referred to in St. Mark x. 25, in answer to the question in verse 17, and again in St. Luke xviii. 25. In later ages this symbol was extensively used by the Christian Church to surround the “Soul of a Saint" after death (illustrated in *Magister Mathesios*). The date of the birth of a Saint was always given as the date on which he or she died and had been born again in the Spiritual Life, and the Saint was depicted in a Vesica Piscis, the vulva of the *Ruach* or

Holy Spirit, representing this new birth. To show the extraordinary reverence and high value attached to this symbol, it is only necessary to remember that, from the fourth century, when Theon of Alexandria lectured on Geometry, and onwards, all Seals of Colleges, Abbeys, Monasteries, and other religious communities, as well as of ecclesiastical persons, have been made invariably of this form, and they continue to be made so to this day. It was also in allusion to this most sacred ancient emblem that Tertullian, and other early Fathers, spoke of Christians as "Pisciculi." It was called the "Vesica Piscis" (Fish's Bladder), and named, no doubt, by the Greeks at the beginning of our Era, for the purpose of misleading the ignorant from the true meaning of the Figure.

One can well understand the object which led the learned Rabbi Maimonides, the greatest savant of the Middle Ages, when addressing his pupils in the twelfth century, to command his hearers: "When you have discovered the meaning thereof, do not divulge it, because the people cannot philosophise nor understand that to the Infinite there is no such thing as Sex;" but later on the noted writer on Symbolism, Durandus, in the introduction to his book, is more explicit, and gives the real meaning as follows: "The Mystical Vesica Piscis . . . wherein the Divinity and,

more rarely, the Blessed Virgin are represented, has no reference, except in name, to a fish, but represents the Almond, the symbol of Virginity and self-production."

The Vesica Piscis, and its name, is intimately connected with the discovery, by Augustus Cæsar in the century preceding our Era, as narrated by Baronius, of a prophecy in one of the Sibylline books, foretelling "a great event coming to pass in the birth of One who should prove to be the true 'King of Kings,' and Augustus Cæsar therefore dedicated an altar in his palace to this unknown God." Eusebius and St. Augustine inform us that the first letter of each line of the verses from the Erythrean Sibyl containing this prophecy, formed the word ΙΧΘΥΣ: (a fish), and were taken as representing the sentence: Ἰησους Χριστὸς Θεοῦ Ὑιὸς Σωτήρ ("Jesus Christ, the Son of God, the Saviour"). Based upon this discovery arose that extraordinary enthusiasm, during the second, third, and fourth centuries, for hunting up further prophecies in Pagan sources, resulting in a great number of Sibylline verses being invented, giving the minutest details in the Life of our Lord. These fabrications seem to have been at that time generally accepted by the masses as true prophecies, though we know .now that they were written some centuries after the events they were supposed to foretell.

Let us now return to the Vesica Piscis. In the paintings and sculptures of the Middle Ages, we find it constantly used to circumscribe the figure of the Saviour, especially whenever He is represented as judging the world and in His glorified state. Many beautiful examples of this in Anglo-Saxon work of the tenth century may be seen in King Edgar's Book of Grants to Winchester Cathedral and the famous Breviary of St. Ethelwolfe. Numerous illustrations of these and other pictures of the Middle Ages, as also diagrams of the properties of the Vesica Piscis, can be seen in the volume I have already referred to dealing fully with this subject.

The building fraternity was a purely Christian community; the First Crusade raised a great enthusiasm for building Christian Churches, and brought in large gifts of money for that purpose. Up to 1140 Norman Archi. tecture held sway, having the "Square" for its unit, its greatest symbol being the *Gnomon*, representing knowledge; but about that time, as we have seen, arose from the study of Geometry, the head of all learning, a Mystical form having the mysterious figure of the Vesica Piscis, the true Gothic Arch, with the Equilateral triangle enclosed as its unit, and symbolising the Trinity in Unity. The recognition of the import of the Trinity was paramount throughout those early days; all

important documents began with an Invocation of the *Tres Personæ,* or were garnished with symbolic illustrations thereof; all the old MSS., already referred to, which have come down to us from that period, invariably commence with "In the name of the Father and of the Son and of the Holy Ghost."

It can therefore be readily understood what determined the sudden change between 1140-1150, resulting in that wonderful accession of beauty to architectural design which we find in the Gothic. The incentive had to be a strong one, and of an eminently religious character, to accomplish the radical change of throwing over so absolutely the Norman, and commencing to build entirely on what are called Gothic lines. A careful examination of the proportions of the structures themselves, and the character of the decorations found in the finest examples of buildings representing that style. at once shows us that the incentive was the symbolism attached to the mysterious figure called the Vesica Piscis, which appears to be not only the principal feature upon which the whole style rests, but is also employed. as a symbol of the Divine, wherever we have Gothic Architecture, either in painted windows or mural decorations. Every Cathedral has its Vesica Piscis, often of enormous dimensions.

Geometry was synonymous with Masonry, and the very *foundation* of the Science of Geometry, as expounded by Euclid, was his *first* proposition. *Every single problem* in the whole of his books necessitates for its construction the use of this one foundation—namely, "how to form an Equilateral Triangle," and this is the Mystical form of "the Knowledge of the Square." This triangle, symbolising the Logos, is therefore not only the *beginning* of the Science of Geometry, and therefore of Masonry, the Head of all the Sciences, but it is by that triangle that all Geometrical forms, and therefore forms of knowledge, are *made*, and it became the most mysterious and secret symbol of the Logos, for is it not written by St. John that "In the beginning was the Logos, and by it were all things made"; so the Vesica Piscis, the cradle of the Logos, became the great *secret* of Masonry, the foundation as we find it upon which Gothic Architecture was evolved, the means by which its wonderful plans were laid down, and the most reverenced figure in Religious Symbolism, as shown by its use in seals, engravings, sculptures, pictures, &c.. throughout the Middle Ages.

Let me make this clearer. The more one examines the typical points in the Saxon, Norman, and Gothic styles of Architecture, the more clearly one sees that the Architects of the

two former used circles and squares on their tracing- boards, as units for their proportions, in drawing up both ground plans and elevations, with here and there suggestions only of the Equilateral Triangle having been made use of in some of the smaller details; whereas the Gothic Architects seem to have used the Vesica Piscis almost entirely. This explains the reason why true Gothic buildings have always been said to be built mainly on the basis of the Equilateral Triangle; this naturally follows, because the use of the Vesica creates, and therefore necessitates, the appearance of the Equilateral Triangle in every conceivable situation. The following quotation is typical of the leading essay writers on this subject: "The Equilateral Triangle enters largely into, if it does not entirely control, all mediæval proportions, particularly in the ground plans. In Chartres Cathedral the apices of two Equilateral Triangles *(vide* frontispiece to these Views), whose common base is the internal length of the transept. measured through the two western piers of the intersection, will give the interior length, one apex extending to the east end of the chevet within the aisles, the other to the original termination of the Nave westward, and the present extent of the side aisles in that direction. With slight deviation, most, if not all, the ground plans of the French

Cathedrals are measurable in this manner, and their choirs may be so measured almost without exception. Troyes Cathedral is in exact proportion with that of Chartres, and the choirs of Rheims, Beauvais, St. Ouen at Rouen, and others are equally so. Bourges Cathedral, which has no transept, is exactly three Equilateral Triangles in length inside, from the East end of the outer aisle to the Eastern columns supporting the West Towers. Most English Cathedrals appear to have been constructed in their original plans upon similar rules." White's Classical Essay on Architecture compares the Norman with the Gothic, where he says: "In what is usually called the Norman period, the general proportions and outlines of the Churches are reducible to certain rules of setting out by the plain Square. As Architecture progressed the Square gradually disappeared, and the proportion of general outline, as well as of detail, fell in more and more with applications of the Equilateral Triangle, till the art, having arrived at its culminating point, or that which is generally acknowledged to be its period of greatest beauty and perfection. in the thirteenth and the beginning of the fourteenth centuries, again began to decline. With this decline the Equilateral Triangle was almost lost sight of, and then a mode of setting out work by diagonal squares was taken up, for such is the

basis found exactly applicable to the work of the fifteenth century, since which time mathematical proportions have been generally employed." And after referring to numerous scale drawings of Churches, windows, doors, and arches, he points out that every student of Church architecture must pronounce those of the untraceried and traceried first point to be the most beautiful of all, those of the Norman to be a degree less so, and those of the perpendicular and debased to be far inferior to either, and in that analysis we find that the Equilateral Triangle was used almost exclusively for determining one order (the Gothic), the Square for another (the Norman), and the Square diagonally divided for the other (the debased).

Now let me try to describe the wonderful properties of the Vesica Piscis, so that you may understand the mystery which shrouded it in the minds of those Mediæval builders. The rectangle formed by the length and breadth of this figure, in the simplest form, has several extraordinary properties; it may be cut into three equal parts by straight lines parallel to the shorter side, and these parts will all be precisely and geometrically similar to each other and to the whole figure,—strangely applicable to the symbolism attached at that time to the Trinity in Unity,—and the subdivision may be proceeded with inde-

finitely without making any change in form. However often the operation is performed, the parts remain identical with the original figure, having all its extraordinary properties, the Equilateral Triangle appearing everywhere, whereas no other rectangle can have this curious property.

It may also be cut into four equal parts by straight lines parallel to its sides, and again each of these parts will be true Vesicas, exactly similar to each other, and to the whole. and of course the Equilateral Triangle is again everywhere. .

Again, if two out of the tri-subdivisions mentioned above be taken, the form of these together is exactly similar, geometrically, to half the original figure, and again the Equilateral Triangle is ubiquitous on every base line.

Again, the diagonal of the rectangle is exactly double the length of its shorter side, which characteristic is absolutely *unique*, and greatly increases its usefulness for plotting out designs; and this property of course holds good for all the rectangles formed by the original figure and for the other species of subdivision. But perhaps its most mysterious property (though not of any practical use) to those who had studied Geometry, and to whom this figure was the symbol of the Divine Trinity in Unity, so dear to them, was the fact that it actually put into their

hands the means of *trisecting* the Right Angle.

Now, the three great problems of antiquity which engaged the attention and wonderment of geometricians throughout the Middle Ages, were "the Squaring of the Circle," "the Duplication of the Cube," and lastly, "the Trisection of an Angle," even Euclid being unable to show how to do it; and yet it will be seen that the diagonal of one of the subsidiary figures in the tri-subdivision, together with the diagonal of the whole figure, actually trisect the angle at the corner of the rectangle. It is true that it only showed them how to trisect one kind of angle, but it was that particular angle which was so dear to them as symbolising their craft, and which was created by the Equilateral Triangle. All these unique properties place the figure far above that of a square for practical work, because even when the diagonal of a square is given, it is impossible to find the exact length of any of its sides or *vice versa;* whereas in the Vesica rectangle the diagonal is exactly double its shorter side, and upon any length of line which may be taken on the tracing-board as a base for elevation, an Equilateral Triangle will be found whose sides are of course all equal and therefore known, as they are equal to the base, and whose line joining apex to

centre of base is a true Plumb line, forming at its foot the perfect right angle, so important in the laying of every stone of a building.

In the volume referred to I have given a skeleton plan upon such a scale of subdivision that a tracing-board, of 5 feet by 8 feet, would be divided up into over one million parts, and, as all these subdivisions are perfect representations of the original Vesica figure with all its properties, the design of the largest building, with the minutest detail, could be drafted with absolute accuracy. There are many other curious properties of this Figure, but they are difficult to explain without diagrams. I will, however, give one more example of its creative power. The problem of describing a Pentagon must have puzzled architects considerably in those early times, but this was again easily accomplished by means of the Vesica. Albrecht Dürer, the great designer and engraver, who lived at the end of the fifteenth century, refers to the Vesica in his works (*Dureri Institutune Geometricarum,* lib. ii. p. 56) in a way which shows that it was as commonly known in his time as the Circle, Square, and Triangle. His instructions for forming a Pentagon are: "Designa circino invariato tres piscium vesicas" (describe with unchanged compasses three vesicæ piscium). Three similar circles are described with centres at the angles of an Equilateral

Triangle, forming the three Vesicæ, by means of which the Pentagon is drawn, and from which also we get a beautiful form of arch very common in the thirteenth century *(vide* illustrations in *Magister Mathesios*). This is also the method used in that old manuscript of the fifteenth century named "Geometria deutsch." In this old MS. it is also shown that the easiest method for finding the centre of a circle, however large, or any segment of a circle, is by means of the Vesica Piscis. And just as we see so many Cathedrals of the Middle Ages are stated by antiquarians to have been planned on the Equilateral Triangle, so do we find the Pentagon appearing as the basis of Architectural designs of buildings of a later date, such as Liverpool Castle, Chester Castle, and other similar structures; but the true means by which each were laid down, as in the case of the Equilateral Triangle, was again the Vesica Piscis. A beautiful example of decoration, on the basis of the Vesica, is seen in the tomb of Edward the Confessor in Westminster Abbey.

I will conclude this subject by quoting from the summing up by Prof. Kerrich (Principal Librarian to the University of Cambridge in 1820), in his masterly Essay on Architecture, where he gives the different forms of what he calls the "Mysterious Figure," used in the

most noted Gothic buildings: he says, "I would in nowise indulge in conjectures as to the reference these figures might possibly have to the most sacred mysteries of religion; independently of any such allusion, their properties are of themselves sufficiently extraordinary to have struck all who have observed them."

From earliest Christian times the principal *doctrine* based upon the Mysticism of the Neo-platonists and the Kabalists was what was called the Γνῶσις, the Knowledge of the All, and the fundamental basis of this, as of all esoteric teaching from the beginning of History, was *Procreation.* From the first dawn of civilisation the "Great One" always had an enemy with whom he had to fight; having conquered, he married that enemy, and their offspring was Life or Duration. In the oldest forms, as in Persia and ancient Egypt, it was Light and Darkness, "Ormuz and Ahriman," "Osiris and Isis," the Light conquering Darkness, the Day conquering Night, resulting in Time and duration. In the Eleusinian Mysteries it was the "Sun and Earth" producing Vegetable Life, and in the Γνῶσις it was the "Ainsoph and Ignorance," resulting in True Knowledge or Everlasting Life.

In the Vesica Piscis (*vide* frontispiece) we see two Equilateral Triangles formed on the same base, similar to what we found in the

ground-plan of Chartres and other Gothic Cathedrals; these two triangles symbolised to the Mediæval Builders the Divine and Human Natures of the Logos, the Word, the Creator; they are both procreated and enclosed in the Vesica; the one having the Apex pointed upwards, represented Divine or Spiritual Life, and in that I have placed the "Tetragrammaton," the Word or name of God (Jehovah), which, throughout the Jewish race for thousands of years, was held to be so sacred that they did not dare to utter it aloud. It was, at this time, depicted in the Equilateral Triangle, the symbol of the Logos, becoming thus the Masonic Word of the Middle Ages, and was probably used, exoterically, for purposes of recognition among members of the Great Building Societies, with the introduction of Gothic Architecture; but the *esoteric* teaching, which was known only to the élite of the Craft and not by the Ordinary Operatives, was the mystical *procreation* of that triangle, the doctrine of Spiritual or New Birth, symbolised by that mysterious figure which we have seen was the very foundation stone of Geometry, and therefore of Tectonic Art, the Head of all learning, and the great Secret of Gothic Architecture, called for esoteric purposes "Vesica Piscis." The Triangle, having the Apex pointing downwards, represented Human or Physical Life,

and I have placed therein a representation of *sacrificial* death, which we shall see was introduced, as a necessity, for the good of the Race.

As "everything in Heaven has its counterpart on Earth," so may we see, by introspection, that the *reflecting* surface, the thin, physical film between the Human and Divine, is represented by that Base, and Human Life then becomes truly, as it should be, the reflection of the Divine.

One more glance through the Window at what I will call—

"The Mystery of the Apex."

The earliest forms of Life, the unicellular "Beings," whether animal or vegetable—for both divisions, if they can be said to be divided, have the same protoplasmic cell as basis of life—were, and are still, immortal except for accidents; they are not subject to natural death as we know it; they multiply by fission and not by "budding." It was only with the building up of cell upon cell into communities, and the advent of polycellular beings of greater and greater complexity of structure, that the "Wisdom" behind natural laws introduced death as an *adaptation,* to prevent monstrosities in the shape of mutilated specimens being perpetuated on the earth. Life is purely physical and, in conformity with the

modes under which our physical senses act, has the appearance of tri-unity. As white light is seen to be composed of but three primary colours, as Music is based on the Triad, as Space is known to us in three dimensions only, and Geometry, "the Head of all Learning," is based upon the Circle, Square, and Triangle, so may we see life in its three primary aspects: the Animal, Vegetable, and Material. The last-mentioned aspect, though long suspected, from the investigation of Crystallography, to have in some mysterious way a common basis with the animal and vegetable, was not fully grasped until, in the last few years, we have been able to study in our laboratories the actual evolution, or more correctly devolution, of matter from one form to another; and as all plants and animals are found to be built up of the same identical protoplasmic cells, so are we now able to break down and analyse not only these cells but even the very structure of matter, and find that all substances are built up of exactly the same bricks, the different forms known to us as Elements being the *designs* of the great Architect upon which each structure has been built; and these completed designs again are used and become the "ashlars" of the higher forms of plant and animal structure. As Evolution in the

Animal and Vegetable Kingdoms has given us Species, so in the Material it has developed Elements. The structures of animal and vegetable life are of comparatively recent formation, and are still apparently progressing in the direction of complexity, whereas the structures of matter appear to have long passed the stage of highest complexity, and the elements are now undergoing the retrograde process of being transformed, by radio-activity, from the more complex into simpler elements of lower atomic denominations—namely, having fewer bricks in each atom.

All these material designs are more or less radio-active—namely, changing into other elements, but some, like radium, polonium, &c., are active to an extraordinary extent. Each molecule or atom may be looked upon as an *aperture*, more or less open, through which we have flowing the equivalent of what may be called a leak from the Infinite, the changing of one element into another being represented by the change of shape or activity of that aperture. Countless ages ago these apertures were, by evolution, growing more and more complex in shape, but when the limit of complexity was reached and the *Apex* was passed, an adaptation, somewhat analogous to death in the animal and vegetable, must have come into play, with the result that these apertures are now becoming more and more simple in

their shape and activity. The Infinite referred to above may be diagnosed by some as being in the fourth dimension of space, or it may even be comprised within the Ether of our known three dimensions, for the discovery of radio-activity has enabled us to see that Ether is not only as dense as iron, but millions of times denser than that metal, every cubic foot, or probably cubic inch, being capable of supplying millions of horse-power if it could only be tapped. A homely simile of this leak from the Infinite may be seen in a glass of aerated water, where an irregularity of surface, a crumb of bread, or a grain of sand becomes the means by which carbonic-dioxide escapes from the interstices of the water.

Radio-active substances then are really forges for forming new structures of matter or forms of energy, rather than quarries from which they are cut, and we seem to get a glimpse of the origin of life, perhaps itself the cause of "retrogression" in the material, coming through from the Reality, the Infinite beyond the physical Universe.

Life and its processes are well symbolised by a triangle, the base of which is the "Divide" between the Real and its reflections or shadows on the Material plane, and through which all energy percolates. One side of the triangle represents anabolism, or the process of build-

ing up, and the other katabolism, the process of breaking down, and at the Apex is the Mystical "Terror of the Threshold" the "Ainsoph" *(vide* frontispiece), which introduced *sacrificial* death to the Physical, as an adaptation in the evolution of, and for the good of, the Human race. With the death of the Physical, the rending of the Veil, as we have seen in View Two, all Shadows and Reflections disappear, and, in place of "seeing as through a glass darkly," the Soul has its true birth, and at last enters upon its heritage in the Divine Life, face. to face with the Reality, the Good, the Beautiful, and the True.

VIEW FOUR

LOVE IN ACTION

IN the preceding Views we have seen that Time and Space have no real existence apart from our physical senses; they are only modes or conditions under which those senses act, and by which we gain a very limited and illusory knowledge of our surroundings. Our very consciousness of living depends upon our perception of multitudinous changes in our surroundings, and our very thoughts are therefore also limited by Time and Space, because *change* is dependent on those two limits, the very basis of perceived motion being the time that an object takes to go over a certain space; we must therefore look behind consciousness itself, beyond the conditioning in Time and Space, for the true reality of Being. We have seen that man is the offspring of two distinct natures—the Spiritual or Transcendental and the Material or Physical; the former is the Real, the latter is only a shadow. If we now try to consider the connection between these two natures, we have to recognise that,

with all our advance in Knowledge during the last hundred years, we are indeed still as children playing with pebbles on the sea-shore, knowing neither why we are placed there, nor what those pebbles are, or whence they came. Though we seem ever to be discovering fresh truths concerning their relations one with another, when arranged in different patterns, built up into new forms, or split up into smaller fragments, we have to acknowledge (substituting thoughts for pebbles) that we are still only learning our alphabet and the simple rules of multiplication, addition, and division, which must be mastered before we can hope to take the real step towards understanding.

We are surrounded by mysteries; we are indeed a mystery to ourselves, we do not even know how the Physical Ego is connected with the physical world; how the sense organs, receiving the impression of multitudinous and diverse frequencies of different intensities, transmit them to the brain, and how the mind is able to combine all these impressions and form concepts. But by examining the Physical Universe, we seem to see clearly that the only Reality is the Spiritual, the Here, and the Now, that our real *Personality* being Spiritual is independent of Space and Time limitations, and is therefore Omnipresent and Omniscient; it may indeed be

not only connected with the Physical Ego of this World, but be in close working connection with other Physical Egos in the Universe, and may, in some wonderful process, through its affinity with the Great Spirit, be helping them to progress in other directions possibly quite beyond our power to conceive under the conditions we are accustomed to here.

A great forest tree forms each year a multitude of separate buds; each of these buds is an independent plant which has only a temporary existence and has no present knowledge of the other buds, but it is by means of all these buds and the leaves they develop, that the tree is nourished and increases from year to year. Still more wonderful is the fact that it is these temporary existences which, in accordance with the general law of life-production, form special "ovules," which we call seeds, each of which has the potentiality for growing up into a great forest tree, which, in its turn, is capable of pushing forth temporary existences in countless directions. We have, in the above process of creating a forest tree, a likeness on the Physical Plane to what I would suggest is the process not only of the creation of the Race, but, on the Transcendental Plane, the multiplication of permanent personalities by means of, or in connection with, the temporary and Space-limited Human Physical Ego.

Again, as the human mind forms a thought, clothes it in physical language, and sends it forth in such a form as not only affects our material sense of hearing, but conveys to the hearer the very thought itself, so the whole Physical Universe is a temporary and Space-limited representation of the Reality which is behind, is in fact the materialisation of the Will or Thought of the Great Spirit. The "taking root" or advent of the Spiritual to the genus homo, made it possible for man to interpret the Good, Beautiful, and True in the phenomena of nature, and, as we, by studying these materialisations, gain knowledge of the Reality, and our personalities become real powers, so may we at length approach the point where we may feel that we are thinking, or having divulged to us, the very thoughts of God; and, though it may never be possible in this life to form a full conception of the Reality, we may, I think, even with our present state of knowledge, aspire to understand the messages conveyed to us in some of the multitudinous forms, under which these thoughts are presented to us, and I propose giving an example of this later on in this View.

Once more, in the case of a picture, it is possible, by examining and comparing a. number of certain short lines in perspective, to discover not only the position occupied by

the Artist, but also the point to which all those lines converge; so by examining and combining certain lines of Thought on the Physical Plane, and following them as far as we can with our present knowledge towards the point where our Ideals of the Good, Beautiful, and True intersect, we may reach the position from which we may be able to form, although through a glass darkly, even a conception of the Great Reality, and therefore of Its Offspring the Transcendental Ego, and its connection with the Universe.

As the whole of Nature is the temporary and Space-limited manifestation of the Reality, so the individual Physical Ego is the manifestation in Time and Space of the Transcendental Ego or true Personality. The Physical Ego is its transient expression and has no other use beyond this life. Each Physical Ego helps, or should help forward, the general improvement of the Race towards perfection. Each generation should come into being a step nearer to the Spiritual, until it can be pictured that at the final consummation, there will be nothing imperfect, no shadow left; the full complement of Spiritual Personalities being complete in the Great All-Father.

Do we not then see clearly that the Physical Ego, comprised in what we call "I am," "I perceive," "I think," "I conceive," "I remember,"

is transient, and has only to do with the progress of the Race? It is the Shadow or Image in the Physical Universe of that Personality which Transcends Time and Space. Take away a small portion of the Brain, the organ of the Mind, and Memory is wiped out, remove the greater part of it and the manifestation of the Physical Ego is destroyed; though the body is as much alive as before, there is apparently nothing left but the physical life, which it has in common with all animals, plants, and probably, as strongly suggested by late discoveries in Radio-activity, even with what is called inorganic matter. The Brain, and therefore the Ego, is not a necessity for Physical life; this is clearly seen in the lower forms of life—it would be difficult to point out the brain of a Cabbage or an Oak Tree.

In the last forty years we have entered upon a new era of religion and philosophy; we hear no more of the old belief that the study of scientific facts leads to atheism or irreligion; we begin to see that Religion and Science must go hand in hand towards elucidating the Riddle of the Universe, and such a change enables us even to aspire to show, as I now propose to do, that it is possible, by examining certain phenomena in Nature, to reach that point where we may feel that we are listening to and understanding, though

through a glass darkly, what may be called the very Thoughts of the Great Reality. I will take for examination the subject most intimately connected with the title of this View—namely, the nature of the growth of the Transcendental Personality, upon what that growth depends, and how we may understand that the attainment to Everlasting Life is dependent upon that growth.

I have already pointed out in View Two that the Transcendental Personality, being Spiritual, and therefore akin to the Great Reality, may be said to have no free-will of itself. Its will or influence must always be working towards perfection in the form "Let Thy Will, which is also my will, be done"; the efficacy of its influence with the Great Reality depends on its growth or nourishment by the knowledge of the Good, Beautifill, and True ever bringing it more and more nearly into perfect touch or sympathy with the All-loving. The power of prayer therefore depends upon two conditions; it must be in the form of "Let thy Will be done," and that which prays must be capable of making its petition felt, by having already gained a knowledge of what that Will is. I am, of course, not referring to that form of prayer which, alas with so many, seems to be the attempt to get as much out of the Absolute

as is possible, with the least amount of trouble.

If now we carefully examine the Phenomena around us, we make the extraordinary discovery that this power to influence is the very basis of survival and of progress throughout the universe. In the organic world all Nature seems to be praying in one form or another, and only those that pray with efficacy, based upon the above two conditions, survive in the struggle for existence. The economy of Nature is founded upon that inexorable law the "Survival of the Fittest"; every organism that is not in sympathy with its environment, and cannot therefore derive help and nourishment from its surroundings, perishes. Darwin tells us that the colours of flowering plants have been developed by the necessity of attracting the bees, on whose visits depends the power of plants to reproduce their species; those families of plants which do not as it were pray to the bees with efficacy, fail to attract, are not therefore fertilised, and disappear without leaving successors. Flowers may also be said to be praying to us by their beauty, or usefulness, and in some cases, as with orchids, by their marvellous shapes. We answer their prayer by building hot houses and tending them with care, because they please us, and therefore we

help them to live; while, on the contrary, those plants that have not developed these qualities are not only neglected, but, in some cases, as with weeds, we take special trouble to exterminate them, because their existence is distasteful to us.

Charles Darwin also tells us that Heredity and Environment are the prime influences under which the whole Organic World is sustained; in other words, every organism has implanted in it by heredity the principle of life, but the conditions under which it will be possible for that life to expand and come to perfection, rest entirely upon its power to bring itself into harmony with its environment. This principle of life does not come naked into the world, it is fortified by heredity, with power gained by its parents in their struggle for existence, and in their persistence to get into sympathy with their environment. The knowledge they gained, by this struggle, they have handed down to their offspring, and given it thereby the possibility of also gaining for itself that knowledge of, and power to get into sympathy with its environment, upon which its future existence will depend. So may we not see that in the Spiritual World, these two conditions dominate, and that it is only by the clear comprehension of their reality that we can understand how all-important it is for the

soul to bring itself nearer and nearer into harmony with its environment, the Spiritual, and how the efficacy of prayer depends upon the Knowledge of what is the Will of God?

We have received from our Spiritual Father the principle of Everlasting Life, and the aspirations which, if followed, will enable that life to expand and come to perfection; but, as in the case of physical organism, the gift is useless unless we elect to use those aspirations aright, and gain thereby a knowledge of our Spiritual Environment, which alone can bring us into sympathy with the Great Reality. Without this "Knowledge of God," we can see by analogy on the Organic Plane that Everlasting Life is impossible—we are as weeds and shall be rooted out. This is no figment of the imagination, it seems to be the only conclusion we can come to if Nature is the work of Nature's God, and Man is made in the image (spiritual) of that God. Herbert Spencer came to the same conclusion when defining everlasting existence. He says: "Perfect correspondence would be perfect life; were there no changes in the environment but such as the organism had adapted changes to meet, and were it never to fail in the efficiency with which it met them, there would be Eternal Existence and Eternal Knowledge." *(Principles of Biology*).

The power of influence, by sympathetic action, may also be seen in another direction; consider the fact that if we are in a room with a piano and we sing a certain note, say E flat, we not only hear that note coming back from the piano, but, if we examine the strings, we find that all the E flats are actually vibrating in sympathy, because they are in perfect harmony with the note given out by the voice; but none of the other strings are responding because they are out of harmony. With this simile in mind, let us consider the curious fact that a moth always lays its eggs on that particular plant upon which the caterpillars, when they hatch out of these eggs, must feed. The study of the Life History of Insects has always been of great interest to me, as I firmly believe that we are on the verge of a great discovery, and that the first indications are being revealed to us through the investigation of the Biology of Insects. Some of you may, perhaps, have watched this progress of ovipositing, as I have done, and noticed how the female moth will hover in a peculiar way over different plants, but does not alight until she comes to a plant near akin to the one she is seeking. She then alights, but remains, on tip-toe as it were, with legs outstretched and wings quivering, and soon mounts again

into the air; it is only when she alights on the proper food plant that she shows unmistakably that she knows her quest is ended and her eggs are laid. This particular plant has no other attractions for her, she takes her food irrespectively from any other flower which secretes honey, and yet, when she is ready to fulfil her destiny, she is unerringly drawn towards that particular plant which must be the food of her offspring. What is this wonderful sense? We call it instinct, a name which is made to cover all other senses in the lower animals, of which we have no cognisance ourselves. Let us take our own senses as a guide: we find that they are all based on the appreciation of frequencies, of greater or less rapidity, by means of organs specially adapted to vibrate in sympathy with those pulsations, and thus we gain knowledge of external things. Two tuning forks or two organ pipes when vibrating close to each other, give out a pure musical note when they are in perfect harmony, and they then have, as it were, "rest" together; but when one is put even slightly out of harmony, there is, in place of a pure musical note, arise and fall of sound in heavy throbs, strangely characteristic of "quarrelling"; in fact, discord and "unrest."

In our sense of hearing we can only appreciate up to 40,000 vibrations in a second as

a musical sound, whereas, with Light and other electrical phenomena, as we shall see in a later View, we can appreciate sympathetic frequencies of not only many millions, but indeed millions of millions in a second, and yet it is possible that, in the sense (of insects) we are now examining of life appreciating life, we may be in the presence of frequencies as far removed from light as light is from sound. If, then, we may follow the analogy from our highest senses, we seem to get a clear explanation of the mystery of insect discrimination. The insect, in her then state, could have no pleasure in the presence of certain plants, their modes of frequency being out of sympathy with that particular Insect Life, and, it may be conceived that, not only is there no inducement for the insect to alight on that plant, but that even in its near proximity that insect would feel discomfort or restlessness; when, however, a plant is reached which is near akin to the one required, less antipathy or unrest would be felt, and, when the true species of plant is reached, all would be harmony, pleasure, and rest, the functions of Insect Life would be vivified, and its life-work accomplished under the influences of sympathetic action.

I have made several other investigations on this subject, but I must only give one more to illustrate the higher form of Animal Life appre-

ciating Animal Life. There is a large class of insects, called Ichneumonidæ, which lay their eggs in the bodies of caterpillars, and, as in the case of a moth laying its egg on the special food plant upon which its caterpillar can feed, so does each species of these insects unerringly lay its eggs in the body of a particular kind of caterpillar. It must be a wonderful sense which can enable an Ichneumon Fly to do this; it has never seen that caterpillar before, as the egg, from which its own caterpillar was hatched, was laid inside the body of one of those caterpillars, and the caterpillar upon which it fed had been eaten up and disappeared at least six months before the Ichneumon Fly had even made its way out of its own cocoon; and yet this insect is not only forced, by some mysterious power, to lay its egg in the body of a caterpillar, but there is only one species which will serve its purpose, and it has to hunt up this particular caterpillar from among thousands of other different species.

Let me put before you what is, perhaps, the most mysterious illustration which we have under this heading, wherein the Ichneumon Fly cannot even get sight of its prey, nor employ any sense similar to our own for its detection. There are several species of moths whose caterpillars live in the very heart of trees. We will take the case of the caterpillar

of Zeuzera Aesculi, the Leopard Moth; the egg of this Moth is laid in a crevice of the bark and, when first hatched, the small larva penetrates through the bark into the centre of an apple, pear, or plum tree, and then commences to eat its way upwards, forming at first a very small tunnel, but gradually increasing it, as the caterpillar grows larger, into a passage of about half an inch in diameter. In such a position, surrounded as it is by solid wood, the thickness of which would probably not be less than one and a half or two inches, we might suppose that the caterpillar would be safe from its enemies, but it is not: there is a large Ichneumon Fly which cannot propagate its species unless it can lay its eggs in the body of this particular caterpillar. This Ichneumon Fly can, from outside, not only tell that inside the stem of that tree there is a caterpillar, but can locate the exact spot, and, still more wonderful, is able to determine whether or not that caterpillar is the particular species it is in search of. There are numerous other species of moths whose caterpillars feed in the centre of trees, and yet this female Ichneumon is able to mark down as her prey, although far out of reach of any sense known to us, that one species which alone can serve her purpose. As soon as she has located the exact position of the caterpillar, she unsheathes a long delicate ovipositor, with which

she is provided, and drills it right through the intervening solid wood until it pierces the body of the caterpillar; she then lays an egg down that long tube into its body and repeats the process two or three times. The caterpillar itself does not appear to feel any inconvenience from this process and continues to feed and grow larger; but it has the seeds of death within itself, and the two or three little caterpillars, which hatch out of the eggs of the Ichneumon, are also growing rapidly inside it. At last, when the time comes that the large caterpillar should have been full fed, and it has eaten its way outwards until it rests close under the bark, preparatory to turning into a chrysalis, its enemies finish their destructive work, and, if the tree is then opened, the empty skin and cartilage skeleton of the large caterpillar is found, together with two or three large cocoons. These cocoons, if kept, will produce in due time specimens of the Ichneumon Fly, and these will in their turn go about their murderous work as soon as their proper hunting season comes round again.

This is only an isolated case out of thousands of similar occurrences in every locality; in fact, if you walk along any palings in the country in the early summer, you will see at every few steps the evidence of similar tragedies. Those of you who live in the

country must often have seen on palings, little heaps containing a dozen or more of the small yellow Microgaster Cocoons, and if these are examined carefully they will be found to be surrounding the skin of a caterpillar. These minute cocoons may be kept under a wine glass and, from each a minute Ichneumon Fly, with (if a female) its sharp ovipositor, will emerge in due time. It is curious what mistakes can be made even by intelligent persons. I have had the skin of the caterpillar and this little heap of yellow Microgaster Cocoons sent me to examine, and have been seriously asked whether this was not a true case of Parthenogenesis; the suggestion being that the caterpillar had actually laid eggs, instead of waiting until it had become a moth, and that its efforts, to alter the course of nature, had been too much for its constitution and it had died in the act ! There are other illustrations I should have liked to give but space will not permit, the most remarkable being, perhaps, the knowledge a Queen Bee possesses of the proximity of another Queen, even when that other is still in the pupa state, sealed up in a waxen cell. I have made numerous experiments with Queens of the common black English Bee (*Apis mellifica*), and also the yellow-striped Italian Bee (*Apis ligustica*), which belong to the same order (*Hymenoptera*) as the

Ichneumon Flies, and the same marvellous sense of life appreciating life at a distance, and through solid matter, is experienced.

If we now follow the same Thought by examining the Inorganic, we make the extraordinary discovery that this power to influence, based on sympathetic action, is the very mainspring by which physical work can be sustained, and upon it depends entirely the very action of our physical senses. Our senses are based upon the appreciation of Vibration, in the Air and Ether, of greater or less rapidity, according to the presence in our organs of processes capable of acting in sympathy with those frequencies. The limits within which our senses can thus be affected are very small; the ear can only appreciate thirteen or fourteen octaves in sound, and the eye less than one octave in light; beyond these limits, owing to the absence of processes which can be affected sympathetically, all is silent and dark to us. This capacity for responding to vibration under sympathetic action is not confined to Organic Senses; the physical forces, and even inert matter, are also sensitive to its influences, as I will now demonstrate to you.

In wireless telegraphy it is absolutely necessary that the transmitter of the electromagnetic waves should be brought into perfect harmony with the receiver—without

that condition it is impossible to communicate at a distance; again, a heavy pendulum or swing can, by a certain force, be pushed, say an inch, from its position of rest, and each successive push will augment the swing, but only on one condition, namely, that the force is applied in sympathy with the pendulum's mode of swing; if the length of the pendulum is 52 feet, the force must be applied only at the end of each eight seconds, as, although the pendulum at first is only moving one inch, it will take four seconds to traverse that one inch, the same as it would take to traverse 10 feet or more, and will not be back at the original position till the end of eight seconds; if the force is applied before that time the swing of the pendulum would be hindered instead of augmented. Even a steam engine must work under this influence if it is to be effective; there may be enough force in a boiler to do the work of a thousand horse-power, but, unless the slide valve is arranged so that the steam enters the cylinder at exactly the right moment, namely, in sympathy with the thrust of the piston, no work is possible.

To understand the next example I want you first to recognise that, apart from its physical qualities, every material body has certain, what may be called, traits of character, which belong to it alone; there is generally

one special trait or "partial," namely, the characteristic which it is easiest for the particular body to manifest, but I shall show you that by sympathetic action others can be developed. I have several pieces of ordinary wood, used for lighting fires, each of which, according to its size and density, has its special characteristic; if you examined each by itself you would hardly see that they are different from one another except slightly in length, but if I throw them down on the table, you would hear that each of them gives out a clear characteristic note of the musical scale: to carry this a step forward, I have a long, heavy, iron bar, about 4 feet long and 2 inches thick, so rigid that no ordinary manual force can move it out of the straight, and, from mere handling, you would find it difficult to imagine that it would be amenable to soft influences. But I have studied this inert mass, and, as each person has special characteristics, some being more partial than others to, say, Literary pursuits, Athletics, Music, Poetry, Engineering, Science, or Metaphysics, so I am able to show that this iron mass has not only a number of these "partials," some of which are extraordinarily beautiful and powerful, audible over long distances, but that by the lightest touch of certain small generating rubbers, not more than an ounce in weight and tipped with cork or leather,

each of which has been put into perfect sympathy with one of those traits, I can make that mass demonstrate them both optically and audibly; but, without those special sympathetic touches, it is silent and remains an inert mass. This result is obtained by physical contact between the instrument and the mass, but we will now carry this another step forward and deal with the subject of the action of Influence at a distance, or what may be called Prayer, between two of these rigid masses. From what we have already seen, it is clear that the Soul of man could not possibly pray with efficacy to a graven image; there is nothing in sympathy between them, and, without sympathetic action, influence is impossible; but it is quite possible for Matter to pray with efficacy to Matter, provided the material soul, if we may use the analogy, is brought into perfect sympathy with the material god, and I can now put before you an experiment showing this taking place.

I have another heavy bar of iron, not so long but of the same thickness as the one already described, and have found its strongest characteristic; I have another small rubber, fashioned so that its characteristic is in perfect sympathy with that of the bar, namely, that the number of vibrations, in a second, of the instrument are exactly equal

to those of the iron mass, and it is, therefore, as we saw in the last experiment, able by contact to influence the bar sympathetically. The slightest touch throws the bar into such violent vibration that a great volume of sound is produced, which can be heard a quarter of a mile away. The result of this sympathetic touch is far from being transient, in fact, the bar will continue to move, audibly, for a long time. This movement in the mass of iron was started by physical contact, but having once started the bar praying, willing, or thinking, whichever you like to call it, that bar now has the power to affect, without contact, another rigid bar of iron even when removed to great distances, provided the second bar possesses a similar characteristic, and that that characteristic has been brought into perfect *sympathy* with that of the first bar. I have a second bar which fulfils these conditions, and, although, at the outset, it had no power whatever to respond, it has been gradually, as it were, educated, namely, brought nearer and nearer into sympathy with the first bar, until it is now able to respond across long distances; it has acted across the whole length of one of the largest halls in London so strongly that it could be heard by all present. We will now reverse the process of bringing these bars into sympathy, and I will throw the first out of

harmony by slightly changing its characteristic; the change is extremely small, quite inappreciable to the human ear, the bar giving out as full and pure a note as it did before the alteration was made; in fact, the change is so slight that it can still, with a little force, be stimulated by the same generator, and yet the whole power to influence has been lost; the first bar, although it is praying with great force, gets no response from the second bar, and, even if the bars are now brought on to the same table and put within a few inches of each other, there is still no reply, there is no sympathetic action, the efficacy of prayer between the two has been completely destroyed. .

Do we not then see the principle upon which the efficacy of Prayer depends, that the whole object of a Human Soul, when using the words "Thy Will be done," is to bring itself closer and closer into perfect sympathy with the Absolute? When that is accomplished, we may understand, from our simile, that not only shall we and our aspirations be influenced by the Will of the Deity, but that then our wishes, in their turn, must have great power with God, and it becomes possible for even "Mountains to be removed and cast into the midst of the sea."

How truly the Philosopher Paul at the beginning of our Era recognised that the

knowledge of God, which Christ Himself tells us is Everlasting Life, may be gained by the study of the material creation; His words were sadly overlooked by many who, half a century ago, were afraid that the discoveries of Science were dangerous to belief in the Divine. He says: the unrighteous shall be without excuse because "The invisible things of Him since the creation of the world are clearly seen, being perceived through the things that are made, even His everlasting power and divinity" (Romans i. 18 to 20, R.V.).

We have seen the truth of this wonderful statement, we have traced the reflection of the greatest attribute of the Deity, Divine Love, on the material plane. What has been the result of our investigation? We find that throughout the whole of Nature the one great universal power is Sympathy.

'Tis verily "love that makes the world go round." What a marvellous conclusion to our investigation! Let us see where it leads us. The whole of creation is the materialisation of the Thoughts of the Deity; we have, therefore, in the forces of Nature, the impress of the very Essence of God. Our Innermost Self is an emanation from Him, and Prayer, which, at the beginning, is only a striving to bring ourselves into harmony with the Deity, must, as the Soul grows in

strength and knowledge, become a great power working under the wonderful principle of Sympathy. True prayer, indeed, becomes "*Love in Action*," and, under certain conditions, Prayer may actually be looked upon as the greatest physical force in Nature. But let us carry this one step further: can we, by our analogy of Matter praying, understand why "the knowledge of God is Everlasting Life"? Look at the first iron bar, and watch how, as long as it keeps on vibrating, the second bar, *because it is in sympathy*, will be kept in motion. If it were possible for the first bar to vibrate for ever, the second bar would, speaking materially, have everlasting life, through its being in perfect sympathy with the first bar; without this connection the bar would be lifeless. Now apply this to our Transcendental Personality; it is being nourished, the knowledge of God is increasing, it is at last pulsating in perfect harmony with the Deity, and when, for it, the Material Universe disappears, its *affinity* to Infinite Love must give it Everlasting Life. Everything that has not that connection is but a shadow which will cease to be manifest when the Great Thought is completed, the volition of the Deity is withdrawn, and the Physical Universe ceases to exist; nothing can then exist except that which is perfected, that which is of the essence of God—namely,

the Spiritual. Perfect harmony will then reign supreme, such happiness as cannot be described in earthly language nor even imagined by our corporeal senses; hence, in the many passages referring to that wondrous Life hereafter, we are not told what Heaven is like but only what is not to be found there:

" Eye hath not seen nor ear heard,
Neither have entered into the heart of man
The things that God hath prepared for them that love Him."—1 COR. ii. 9.

There are several other phenomena which I might have examined, but I chose this particular aspect of the Reality, as best illustrating the subject I am trying to elucidate in these Views, though it was probably the most difficult one to bring home to the general reading public. There are, I know, from personal knowledge, many of my readers who will have been able to follow and appreciate what I have attempted to demonstrate, but to those who have not grasped the connection between the Infinite and Finite, the Transcendental and the Physical Ego, the Real and its Shadow, a few more words of explanation may be helpful.

It is easy to see that the negatives, Cold, Ignorance, Falsehood, Ugliness are manifestations of their positives, as given in my list

in View One, and it is also not difficult to show that Evil or Sin is dependent upon Good in the same way as the Shadow depends upon Light for its manifestation. Do not let me be misunderstood; I have never suggested that these negatives or negations have not the appearance of realities to us, under our present conditions of existence; they indeed have to be dealt with by us as realities, but they are only manifested as phenomena on the physical plane, because our Senses, and therefore Thoughts, are limited by Time and Space and therefore dependent upon *relativity.*

Let me put the case of Good and Evil before you, as analogous to, say, Light and Shadow. Moral laws and responsibility thereto are dependent upon the existence of Goodness; the purely animal Homo was, as I have pointed out, free from sin or responsibility until the advent of the Spiritual made manifest, in that animal, the physical Ego and raised him far above all other animal. Man thus became a responsible moral being, a living soul, aware of Right, and therefore of Wrong, and certain acts then became for him sin that were not sin before. Thus the advent of Christ, and, in a less degree, the coming into the world of every good man, so raised, and is raising, the level of moral rectitude that things become sin that were not sin before; St. Paul himself specially recognises

this when he says that without law there is no sin. The Goodness, then, brought into the world by Christ, did not create sin but made it manifest, and gave it the appearance of reality under our present conditions of life and thought. How well the Mystic Paul understood that the Invisible is the Real, and that the Visible—namely, the phenomena of nature—is only dependent upon Time for its manifestation. His words are: "For the things which are seen are temporal but the things which are not seen are Eternal."

I have tried in these Views to use only simple everyday language, and am fully aware how inadequate are the words I have employed; but my readers will have, I hope, recognised how difficult, and in many cases impossible, it is, in treating these metaphysical subjects, to find words to express the exact meaning; we have to describe the Infinite in terms of the finite, and by use of imperfect finite analogies to get a glimpse of the otherwise unthinkable, and even then it requires a mystical sense, or what St. Paul called spiritual discernment, to see beyond the physical mists. If the whole of the phenomena of Nature must be looked upon as the manifestation of the Divine Noumenon, it follows that Matter is as divine as the Spiritual, though not as real; it is His shadow, or the outline of

His very image, thrown upon the material plane of our sensations; and the principle of sympathetic action, upon which, as we have seen, the whole power to influence depends throughout the Universe, becomes surely the best symbol we can use for understanding the efficacy of prayer and the connection between our Transcendental Self and the All-loving. Realise that the Transcendental Ego is a Spirit, and therefore akin to the Great Spirit, not only in essence, but in "loving and knowing communion," then look at my last experiment, where we saw two material bodies (remember they are shadow manifestations of the Reality) which could influence each other from the fact that they were akin, not only in substance, but in perfect sympathetic communion.

If now we watch the shadows of two human beings thrown upon a wall, and see those shadows shaking hands and embracing each other, are we not justified in concluding that those images give us a true explanation of what is really taking place? and is not that exactly what I have done? have I not shown, as I proposed to do, that it is possible by examining the phenomena of Nature (the shadows of the Reality) to reach that point where we may even feel that we are listening to, or having divulged to us, some of what may be called the very thoughts of the Great Reality?

VIEW FIVE

THE PHYSICAL FILM

WE have seen in former Views that the whole Phenomenal Universe, as perceived by our senses, and all intellectual thoughts or concepts based on those perceptions, are, in reality, only mists or shadows; they have no existence apart from our physical senses, and may be likened to a thin film, which at death is pricked and passes away like a scroll, leaving us face to face with the Reality. We thus seemed to grasp that all phenomena, including our Physical Egos, are but the shadows or outline of the Reality, as depicted on our limited plane of consciousness; but these phenomena, having Motion for their basis, are none the less real to us under our present outlook, limited as it is by conditioning in Time and Space, and we have to deal with them as realities in our everyday life. I want to make this distinction clear in the present View.

Those of us who were youngsters in the 'sixties, and were fortunate enough to be taken to that land of wonders for children,

the London Polytechnic, will remember seeing what were called Professor Pepper's Ghosts. By means of a large sheet of glass on the stage, the *reflection* of a human being (otherwise invisible), which we will call the "*unreal,*" was, by the audience, seen walking alongside the people on the stage, and it was impossible to say which was the real and which the unreal. When the unreal was made to appear further back on the stage, it was apparently seen through the real figures and they appeared as ghosts, for they were seen to be transparent. If now we fix, perpendicularly on a table, a small pane of glass, and place, say, an orange in front and another orange behind it, we can arrange so that an observer, looking through the glass, sees two oranges alongside each other, one being the real and the other the unreal, and, with proper lighting and dark background, it is impossible to determine which is which, as they are both apparently real oranges. We will call the real, A, and the unreal, B; we now also introduce a human hand on both sides of the glass, and again we have apparently two real hands close to the oranges; if the real hand is now seen to try to touch the B orange, it passes through it, but it can take up the A; and the same result is seen when the Unreal hand tries to grasp them, except that it can grasp

the B but not the A; it is, in fact, only the unreal that can apprehend the unreal, and the real the real.

The above simile may help some of my readers to understand how the phenomena of Nature, though having no real existence apart from our senses, have the appearance of reality to us, because both we and the whole Phenomenal Universe are the unreal of our analogy, namely, the reflection or shadow of the Real on the physical plane. If we run against a stone wall, which is also part, with us, of the shadow, we hurt ourselves and acknowledge its existence, but to the Real it would not be an obstruction at all, it is not there. We know that this wall is not really solid, it is made up of Atoms revolving round each other but never touching, but the man in the street would give as the reason why it hurt, that it was dense, or what is called hard; if the wall were made of hay, or cotton wool, or of sunbeams, we should not suffer by running against it; in fact, the denser anything becomes, the more it shows its character of being real to our senses. If we take this as the true explanation for the Physical Universe, we are met with something quite beyond our powers of comprehension, when we try to form a conception of the all-pervading Ether; unless we may look upon

it as actually a *presentation* of the Reality itself. If we wave our hand, we can feel the obstruction of the air, but we cannot feel the Ether. We think our earth very solid, and we know it is rushing round the sun at the enormous rate of 60,000 miles per hour, but it finds no obstruction in the Ether, there is no retardation of its velocity; and yet the study of Radio-Activity has quite lately shown us that that Ether is not only as dense as iron, or a hundred or a thousand times denser, but millions of times denser than that metal; and yet it permeates all matter like a sieve. In Sir Oliver Lodge's words, "the Ether is so dense that matter by comparison is like a gossamer or a filmy imperceptible mist." We can, therefore, by again using our "Ghost" analogy, understand why matter cannot obstruct the Ether, or vice versa; there is no perceivable friction between them, unless, as I shall presently suggest, we may find something akin to obstruction by Matter, not to Ether itself, but to its pressure, in the phenomenon of Gravitation.

The evidence we are gradually winning from Radio-Activity seems to be leading us to the conclusion that all forms of matter are but different motions or strains in the Ether (perhaps, as Lord Kelvin thought, in the form of vortices), that the different atoms of which matter is composed are, as

suggested in View Three, *apertures* of different complexity of outline—namely, those points at which Ether is absent or its density attenuated. Have we not apparently here another example of Positive and Negative, the Invisible the Ether, as the Real, and the Visible, the Material Universe, as its Negative the Unreal, similar to our list of Positives and Negatives in View One? Ether itself cannot be explained by any of the known dynamical laws, though it is probably the very root and cause of all of them; it is absolutely beyond our plane of perception or conception. We can only perceive certain effects of its presence when it comes into our limited world of consciousness, under the aspects of Time and Space —namely, in its movements, which we classify as forms of matter and modes of energy.

It is only lately that we have been able to see clearly that the effects known to us as Light, Heat, Electricity, and Magnetism are caused by pulsations or rills of different rapidity in the Ether (this will be referred to in a later View); it is also probably the cause of what we call Gravitation, and we shall see that the action of Gravitation may, after all, be not in the direction of a pull but must be looked upon as a pushing force. Gravitation is common to all matter; in common language, every particle attracts every other particle with a force directly proportional to

its mass, and inversely to the square of its distance; it is a very weak force compared with others we know, and difficult to measure except when a large mass of matter is involved. Perhaps this will be clearer, and not far from the truth, if I say that the force of Gravitation exerted between two masses of matter compared with that which we find acting between the constituents of matter—namely, in chemical affinity, is comparable to the difference existing between the density of matter and the density of Ether.

The latest calculation of the pressure of the Ether is almost inconceivable—namely, about 25,000 tons on the square inch, or 3,600,000 tons on the square foot; it may well therefore be that, in the degree of permeability of matter by the Ether, when we can calculate it, will be found the explanation of what we call Gravitation between two masses; they are each shielding the other from Ether pressure, in its own direction, with an obstructive force equal to its mass. The reason why the earth appears to attract us, is that it is shielding us from a certain amount of pressure in its direction; and we know that we are also apparently attracting, every particle of the earth with a force proportionate to our mass, because we are, however slightly, shielding the earth from pressure in our direction; if this is the true ex-

planation, Gravitation is a phenomenon of the Ether; it will be seen to be a movement of matter in the line of least pressure, and is therefore a push and not a pull.

Let us now come down to what we understand better concerning the subject of this View.

The question, "What is Truth?" "What is the Reality?" goes to the very root of the Riddle of the Universe. We are all trying in one direction or another to answer this question. As knowledge increases, old theories become untenable and have to be discarded, and, in their place, fresh ones are formulated to account for new phases of phenomena. There seems a general impression, among even thinking people, that scientists are wedded to, and always trying to find proofs for, their last theories, but this is not the case. The endeavour of the true seeker after truth is not so much to discover fresh facts which coincide with existing theories, as to find phenomena which cannot be explained thereby; there is indeed more joy over one fact which does not agree with preconceived theory, than over ninety-nine facts which are found to fall under that heading. In our everyday life we have become so accustomed to take for granted that what we see, hear, or feel by touch must be real, that it is difficult for the man in the street to realise

that our senses woefully deceive us; that perception without knowledge often leads us astray into false concepts, and these false concepts lead us into difficulties which require fresh concepts to be formed, and these again demand further and more exact knowledge to be applied to perceived phenomena. This necessity for overcoming difficulties is the greatest incentive we have for gaining fresh knowledge of our surroundings. Owing to the fact, as already pointed out, that our sense perceptions are based upon the appreciation of change or motion, and must therefore be limited in Time and Space, and that the trueness of our conceptions of the Reality is dependent upon the knowledge which can be brought to bear upon those perceptions, we are forced to postulate two aspects of the Universe; one of these is what may be called the Visible, Finite, or Physical, which indeed carries the appearance of Reality to our limited senses, though it has no real existence for us apart from those senses, and the other is that which transcends our utmost conception, which we call the Invisible, the Infinite, or Spiritual.

At the outset of all investigation, we are forced to recognise that the only way we can approach conception of the Infinite is necessarily in the form of a negative, the negative applying to those things of which

we have cognisance; we carry our thought to the utmost limit possible with our present knowledge, and, when we have come to a standstill, we conceive the Infinite to be not that but something further on. As our knowledge increases by small steps, that something further on seems ever to be flying from our grasp by mighty strides, until we are forced to bow our heads and recognise that we are in the presence of, though still not in sight of, the Reality. A divine impulse is ever urging us forward to greater conceptions but shattering our hopes, and giving us a feeling akin to despair, if we arrogate to ourselves a greater power of conception than we have knowledge to sustain; we have to approach the study with, indeed, that feeling of elation which the consciousness of our origin and destiny wakes within us, giving us a feeling of certainty that we are capable, in the hereafter, of attaining to the highest summit of knowledge, but with that humility, in the present, which makes us acknowledge that he who knows most knows most how little he knows. In this frame of mind let us now examine our surroundings.

We are living in a world of continuous and multitudinous changes; in fact, without change, we could have no cognisance of our surroundings, we should have no consciousness of living. We have become so accustomed

to certain sensations that we are apt to take them as facts, and scoff at the suggestion that they are non-realities. I propose, however, to show that what we perceive are not Realities, and true conception of our surroundings depends upon the knowledge which we can bring to bear to interpret the meaning of these sensations. It is only in response to our conscientious endeavours to form new concepts that knowledge is being daily revealed to us; the more we progress in Knowledge the more we see that Perception alone without Knowledge leads to false concepts, and these in their turn create fatal obstacles and difficulties to our progress towards the true appreciation of the Universe. Let me give a few examples. .

In early times the Sun and the Stars were seen to revolve round the Earth once every day, and, without Knowledge of Astronomy, this was taken for granted as an absolute fact, and was looked upon as a reality ; later on, however, it was noted that the Stars never changed their relative positions; this necessitated a new concept, namely, that they were fixed on the inner surface of a huge globe, which was also revolving. This false concept brought other difficulties into play, the question arose as to what was beyond the globe, and also the difficulty that, when the Stars as well as the Sun

were found to be at such enormous distances from the Earth, their rates of motion were quite inconceivable. Even in the case of the Sun the motion represents over twenty-five million miles per hour, and the apparent motion of the Stars is thousands of times faster than Light travels. These insuperable difficulties were not swept away until, by the advance of Knowledge, the falsity of conception, based only upon appearance, was made manifest, and it was seen that it was the Earth which revolved and not the Stars. Even then, owing to its supposed antagonism to what was stated in the Bible, the new Conception was opposed with great bitterness, it being long looked upon and denounced as a sacrilegious invention, and anybody daring to promulgate such a doctrine was threatened with death.

Our present Conception, that the Earth turns round on its axis once every day, and rolls in its orbit round the Sun once in every year, may be called a Reality to our finite Senses; but I shall show later on that, except for the finiteness of our senses and the imperfection of our Knowledge, the Concept is not a true one. With perfect Perception and perfect Knowledge we shall see that, apart from the two limitations or modes under which our physical senses act, there can be no such thing as Motion,

because the very essence of Motion is but the product of those limitations, namely, Time and Space.

We are so accustomed to take everything for granted, that it may perhaps seem strange to question whether it can even be asserted that we have ever seen matter. Let us turn towards a common object in this room. We catch in our eyes the multitudinous impulses which are reflected from its surface under circumstances somewhat similar to those in which a cricketer "fields" a ball ; he puts his hand in the way of the moving ball and catches it, and, knowing the distance of the batsman, he perhaps recognises, by the hard impact of the ball, that the batsman has strong muscles, but he cannot be said to *see* the batsman by that impact, nor can he gain thereby any idea as to his character. So it is with objective intuition; we direct our eyes towards an object, and catch thereby rays of light reflected from that object at different angles, and, by combining all these directions, we recognise *form*, and come to the conclusion that we are looking at, say, a chair. The eye also tells us that rays are coming in greater quantity from some parts of it, and we know that those parts are *polished;* the eye again catches rays giving higher or lower frequencies of vibration,

and we call that *colour;* our eyes also tell us that it intercepts certain rays reflected from other objects in the room, and we know that it is not *transparent* to light; and those are our sight perceptions of a wooden chair.

We may go a little further by "pushing," when we know, by the amount of resistance compared with the power exerted, what force of gravity is being exerted by and on that chair, and we declare it heavy or light, but by these means we get no nearer to the knowledge of what matter is. By tests and reagents we can resolve wood into other forms which we call Carbon, Oxygen, Hydrogen, Nitrogen, &c., which, because we cannot divide them into any other known substances, we call "Elements," but we can only look at these in the same way as we are looking at the chair. Chemists, however, carry us a little further, and show us that the Elementary substances have not only their likes and dislikes, but their passionate desires and lukewarmness to others of their ilk, and, when opportunity offers, they break up with great violence any ordinary friendship existing between them and their neighbours, and seize on their coveted prey with a strength of will surpassing anything experienced in the Organic World; and this new association they maintain, until they, in their turn, are

dispossessed, or they encounter another substance of still greater attraction, when they leave their first love and take up new connections.

I shall touch upon the subject of what matter is later on; meanwhile let us consider how, owing to our senses being limited by the considerations of Time and Space, we are surrounded by inconceivables, and yet it is those very inadequate conceptions which force us to acquire Knowledge; the greatest incentive we have to pursue our investigation is, as we have seen, the fact that Perception without sufficient Knowledge leads us into difficulties. Let me give you two instances of these inconceivables. Infinite Space is inconceivable by us, but it is also quite as inconceivable, or perhaps even more so, to think of Space being limited, and yet we are forced to declare that one of these two must be true. Again, Matter is either composed of ultimate bodies, of a certain size which cannot be divided, or is infinitely divisible; both of these are inconceivable, the latter for the same reason as that of the Infinity of Space, and the former because it is inconceivable that the ultimate body could not be divided into two parts by a sharp edge forced between its two sides, or by a stronger force than at present holds it together; it has indeed been suggested as

an explanation that, if an atom could be divided, it might cease to be matter, that its parts would have no existence, but it is difficult to conceive how two nothings can form one something.

Another example of Perception leading to a false Concept is our Sense of Pain; we apply a red-hot coal to the tip of one of our fingers and our Perception would have us believe that we feel intense pain at the point of contact, but we know this to be a false Concept, as it can be shown that the pain is only felt at the brain: there are in communication with different parts of our body small microscopical nerve threads, any of which may be severed with a pen-knife close to the base of the skull, with the result that no pain can then be felt, although the finger-tip is just as much alive and is seen to be burning away.

Another example is our Sense of Hearing. A musical sound is made up of a certain number of pushes in a second, but each push is silent. It is only, as we have seen, a musical sound to our Sense when the pushes recur at intervals of not more than the sixteenth part of a second. The prongs of a tuning-fork, vibrating 500 times per second, seem to be travelling very quickly, but are really only moving at the rate of 10 inches per second, or not much over half a mile per hour,

when the amplitude is the hundredth part of an inch, which gives quite a loud sound.

Light is also composed of rills in the Ether, but the rill itself is not Light, it is only Light when these rills strike, with a certain enormous frequency, on a special organ adapted for, we might say, counting these frequencies, and if these frequencies fall below that certain number, or above twice that number per second, there is no Sense of Sight.

How few people have ever realised what a wonderful Counting Machine they possess in their organ of Sight! I think the best method I can adopt, to bring this clearly before you, is to take our tuning-fork, vibrating 500 times per second, a rapidity which to some will be even difficult to comprehend, and then ask you to consider how long that fork must continue to vibrate before it has accomplished the full number of frequencies, which must :necessarily impinge upon the eye in one second of time, before the phenomenon of sight becomes possible. That tuning-fork would have not only to continue its vibrations without diminution for seconds, minutes, hours, weeks, months, years, or hundreds of years, but for 30,000 years before it has. accomplished the full number of pulsations which, as Ether waves, must strike the eye in one second of time, to give the impression of Light; the calculation is easy, the rills of

Red Light are so small that 40,000 of these only cover one inch of length, and light travels 186,000 miles per second. If therefore the number of inches in 186,000 miles are multiplied by the 40,000, and the product is divided by the 500 times which the tuning-fork vibrates in one second, you have the number of seconds that tuning-fork must vibrate, before it has completed the number of impacts which, in one second of time, must fall on our retina to give us the impression of red light; and that tuning-fork would have to vibrate nearly twice as long, say 50,000 years, to reach the number of impulses which strike the eye in one second of time and give the impression of violet light; and between these two limits are situated the colours—Orange, Yellow , Green, Blue, and Indigo.

What a marvellous sense then is Sight, when we find that, not only can it grasp these innumerable vibrations, but can actually differentiate colours, appreciating as a different colour each increase of about one-tenth in these multitudinous frequencies; and it is principally by means of this Sense of Sight that we gain a knowledge of what is happening around us. And yet what strides we have made in the last two hundred years to improve upon that instrument! With all its wonderful capabilities, we shall see later on that the eye is a very imperfect instrument

for seeing very small objects, or even large objects when at a great distance. With the present compound Microscope, only developed in the last hundred years, and its apochromatic lenses, invented only in the last forty years, we are able to see and photograph objects of a minuteness immeasurably beyond the power of the human eye, and, with our telescopes, we can see and photograph stars far beyond the possibility of vision by the unaided eye; and yet, by the stellar spectroscope, we are actually able to examine and identify the very atoms of which that distant star is composed, or rather was composed hundreds of thousands of years ago; we can compare those atoms with the same atoms in our laboratories, and we find that, though the former are hundreds of thousands of years older than the latter, they show absolutely no signs of wear or loss of energy, though they have been for that enormous time, and are still, pulsating at the rate of not only millions but billions of times per second; and though the pulsations they emit have travelled across such a vast depth of space that the mind cannot even imagine the distance, there has not been any diminution in the numbers of pulsations per second, nor the slightest slowing down of the rate of flight at which they started on their journey from that far-off world. If there had been the

slightest change we could detect it at once by means of the Spectroscope.

With another instrument we are able, not only to hear but to converse audibly, as long as we like, with another human being a thousand miles away, who is also sitting comfortably in his own arm-chair and speaking to us with as much freedom as though we were both in the same room. With another instrument we can go further, and exchange thoughts, in a few seconds, with a being on the other side of the world, by means of a thin wire that is itself fixed, and does not move, and we have lately invented another means by which we can do the same, over several thousands of miles, without even a connecting wire. With another instrument we have gone far beyond the facility with which the Printing press enabled us to communicate our thoughts to our fellow human beings, we can actually imprint our very words and laughter upon a wax cylinder and send it to the antipodes, and our friends there, with a similar instrument, can not only hear and recognise our very voice, but can make that voice repeat our thoughts audibly, to a thousand others at the same time, and can repeat that process for hundreds of times without exhausting that voice. With another instrument we can depict on a film, not only the images of our friends but their very

actions, which may also be sent to any distance, and the persons, thereon depicted, may be seen by their relatives alive and going about their everyday employments, with every movement exact to life. We can cross the Ocean against the wind and waves by means of harnessed sunbeams, without any exertion of our own, at the rate of an express train, which train, by the by, is also moved by the same means; we can dive to the bottom of the sea and journey there for hours, in perfect safety, without corning to the surface, and we are even developing wings, or their equivalent, which from immemorial tradition we were not to possess before we had finished doing our duty properly in this world and had gained admission to the next.

We can do all these things, but how ignorant we still are in the commonest doings of Nature! By giving up our whole lifetime, and spending millions of pounds, we could never make a grain of wheat or an acorn, and. wherever we turn we find ourselves confronted with mysteries beyond our power to explain from a finite material standpoint; even in material vibrations we meet a mystery, almost beyond our power to comprehend. Take for instance those small insects, of the family of Grasshoppers, which make the primæval woods of Central America give

out a noise like the roaring of the sea, a wondrous sound never to be forgotten by those who have heard it. By means of a kind of rasp one of these insects creates a sound which Darwin states can be heard to the distance of one mile: these insects weigh less than the hundredth part of an ounce, and the instrument by which the noise is made, weighs much less than one-tenth of the total insect; it is less therefore than one thousandth part of an ounce in weight, and yet it is found, by calculation, that this small instrument is actually able to move at the enormous rate of a thousand vibrations per second and keep in motion for hours, from five to ten million tons of matter, and it does this so powerfully that every particle of that enormous bulk of matter gives out a sound audible to our ears. But even these millions of tons are not its limit of action, for we know that these vibrations must go on until, in the end, every particle of matter connected with this earth has been affected by each of those vibrations.

All our difficulties of understanding the true meaning of these and other phenomena around us are, as I have already pointed out, caused by our inability to recognise that vibration or motion has no reality, it is a pseudo-conception arising from the fact that our senses are entirely dependent upon the

two modes or limitations, Time and Space, for their very action, and that, as conceptional knowledge is based upon perceptional knowledge, our very consciousness of living is also dependent upon these same limitations. We have seen that Motion is nothing but the product of these two modes of perceptions, and, in my next Views, I shall examine these elusive limitations, these two mysteries of Time and Space, the forever and the never-ending; I shall trace them to the utmost limit of our conception, and try to gain thereby a clearer insight into the fact, not only that the whole Physical Universe is but a transient and Space-limited phenomenon, a thin film which our senses have erected and which divides us from the Reality, but that, if our power of *introspection* were fully developed, we should know that the Reality is nearer and dearer to us, and has much more to do with us, even in this life, than has the physical.

VIEW SIX

SPACE

WE have seen that our very thoughts, and therefore consciousness of living, are limited by Time and Space, but we cannot with the utmost endeavour conceive a limit to Time and Space; they are two twin sisters, alike in many respects but different in others, and we shall realise later on that they are readily interchangeable. The sensuous aspect of Motion is, as we have seen, the time that an object takes to go over a certain space—namely, what is called the rate at which it passes from one point to another, and we cannot imagine Motion unless it contains both of these modes in however small a quantity; we may have the greatest imaginable space traversed in a moment of time, or the smallest imaginable space covered in what may be called, for want of a better word, an eternity, but we still have to postulate what we call Motion; this, of course, follows from the fact that our thoughts require both these modes for forming concepts. If we compare our conception of Matter with that of Time and Space, we see

that the two latter are not separately the object of any sense, but are the modes or conditions under which all our senses act, to a greater or less degree, and these, conditions cannot therefore carry the same impression of objectivity to our senses as Matter does, except perhaps in the sense that all physical phenomena are simply motion, and motion is the product of both of these limitations but not of either of them separately.

If we analyse our conceptions of Time and Space we seem forced to postulate that they are both infinitely divisible and infinitely extensible; they are both what is called continuous and not discrete, we cannot conceive any minimum in their division; both duration in Time and extension in Space can be reduced, as it were, to a mathematical point; nor can we conceive any maximum in either duration or extension. They are both therefore comprised in every conception possible to our consciousness; all parts of Time are time and all parts of Space are space; there are no holes, as it were, in Space which are not space, nor intervals in Time which are not time, they are both complete units; Space cannot be limited except by space, and Time cannot be limited except by time. So far they are alike, but, on the other hand, Space is comprised of three dimensions—namely, length, breadth, and depth, whereas Time

has the appearance to us of comprising one dimension only—namely, length.

Under our present conditions we can only think of one finite subject at a time, and, at that moment, all other subjects are cancelled. We can therefore only think of points in Time and Space as situated beyond, or in front of, other fixed points, which again must be followed by other points; we cannot fix a point in either so as to exclude the thought of a point beyond; we can only in fact examine them in a form of finite sequences.

The Idea of Infinity, which we shall refer to in a later View and show to be a false conception, is therefore a necessary result of the limitation of our thoughts; our physical Ego cannot conceive beyond the Finite as long as we are conscious of living under present conditions. With every act of perception by our senses, we have therefore not only intuition of the Visible or Finite, but we become at the same moment aware of an Invisible Infinite beyond. Time appears to us as an inconceivable, intangible something, which gives us the impression of movement without anything that moves it. Space is an omnipresent, intangible, inconceivable nothing, outside of which nothing which has existence can be even thought to exist. Let us now try and get an insight into what we mean by perception of distance in space.

The appreciation of distance depends upon what is called *parallax*, or the apparent displacement of projectment of an object when seen by our two eyes separately. If you hold up a finger and look at it, with each eye separately, you will see that the finger is projected by each eye on to a different part of the background; the angle which the lines of sight, from each eye, make when they meet at the object, is called the angle of parallax, and the further the object is away the smaller that angle becomes; it is, in fact, the angle subtended, at the object, by the distance between the two eyes. As the object is brought nearer the eyes have to be inclined inwards to impinge on that object; the appreciation of distance then, in our sense of sight, is dependent upon our perception of the amount of inclination of those two lines of sight, and is therefore an acquired knowledge. The distance between the eyes is about 2½ inches, and this is a very short base line upon which to estimate distance; in fact, without the help of perspective and known dimensions of surrounding objects, it is doubtful if anyone could by its means estimate distance beyond a few hundred yards. The object would, of course. also have to be an unknown one, as, otherwise, the converse of the above comes into play, and the distance could be estimated by the angle which the known diameter of the

object subtends at the eye; but this necessitates the size of the object being known beforehand and the employment of perspective.

We can extend our perception of distances by, ourselves, moving from one place to another, gaining thereby a longer base line, and noting the displacement of projection of the object on a distant background; by that means, distance up to several miles can probably be appreciated. But, when we try to determine the distance of, say, the Moon (240,000 miles away), we are helpless, especially as we have no marked background, except in the case of occultations of the Sun or Stars. But the Astronomer at once comes to our aid; a distance of several miles is carefully measured on a level plane, and, by placing telescopes at the extremities of that known line, we can mark the inclination of those telescopes to each other when focussed upon a particular mountain peak on the moon; by this means we know the angle of parallax (180° less the sum of the two angles of inclination), and, from this and our known length of base line, we can calculate the distance. When however we go a step further and attempt to calculate the distance of the Sun (93,000,000 miles), we find our last base line again absolutely inadequate. But the astronomer helps us again; we now separate our two telescopic eyes by

the whole diameter of the earth (7900 miles); this is accomplished by taking from the Equator two simultaneous observations of the Sun, at its rising and setting; for when the Sun is setting, at say the Equinox, it is at that moment rising at exactly the other side of the earth; the inclination of the two telescopes, directed to a certain point on the Sun, will now give the distance approximately, though even this base line is too short for exactitude. When however we attempt to go still further and try to ascertain the distance of stars, which are a million times further off than the Sun, such a base line is quite out of the question. How then can we get a base line for our telescopes longer than the whole width of the earth? The Astronomer again provides the means. The earth takes one year to complete its vast orbit round the sun, and the diameter of that path is 186,000,000 miles. This is made our new base line for separating our telescopes; an observation of a star is taken, say, to-day, and after waiting six months, to enable the earth to reach the other extremity of its vast orbit, I another observation is taken, and yet it is found, as we shall see later on, that the distance of the nearest fixed star is so *stupendous* that even this base line, of 186,000,000 miles, shows absolutely no inclination between the two telescopes except in about a dozen cases,

and even in those the angle of parallax, perceivable, is so minute that no reliable distance can be calculated; we can only say that the star is at least as far awayas a certain distance, but it may be much farther.

Let us now try by other means to get a clearer insight into the subject of this View, by tracing Space to the utmost limit of human conception. I think the best method I can adopt will be to take you, in imagination, for a journey as far as is possible by means of the best instruments at our disposal.

We will start outwards from the Sun, and glance on our way at the worlds involved in the Solar System. Let us first understand what are the dimensions of our central Luminary. The distance of the Moon from the Earth is 240,000 miles, but the dimensions of the Sun are so great that, were the centre of the Sun placed where the centre of the Earth is, the surface of the Sun would not only extend as far as the Moon, but as far again on the other side, and that would give the radius only of the enormous circumference of the Sun; another way to understand its size is, to remember that, light travelling 186,000 miles per second, would actually take five seconds to go across its disc. Let us now start outward from this vast mass. The first world we meet is the little planet

Mercury, only 3000 miles in diameter, revolving round the Sun at a distance of 36 million miles. We next come. upon Venus, at a dIstance of 67 millIon miles. She is only 400 miles smaller in diameter than our \ Earth, and, with the dense atmosphere with which she is surrounded, animal and vegetable life sImilar to that on our Earth would be possible. Continuing our course, we arrive at our Earth, situated 93 million miles away from the Sun. Still speeding on, a further 50 million miles brings us to Mars, with a diameter of nearly 5000 miles, and accompanied by two miniature moons. The sight of this planet in a good instrument is most interesting. Ocean beds and continents are visible, and the telescope shows large tracts of snow, though not necessarily formed from water (perhaps carbonic dioxide), surrounding its polar regions, which increase considerably during the winter, and decrease during the summer seasons on that planet; but there are no canals! The fact that our largest and best telescopes failed to show these imaginary canals, was an insurmountable barrier to the advocates of these markings, but the "Canalites" made their contention ridiculous when they actually suggested that the reason for this failure to perceive them was that our telescopes were too large to see such small markings! How

such a statement could have been made is incomprehensible on any supposition, as everybody knows that the whole use of size, or what is called aperture, in a telescope, is to help us to see more clearly small and faint markings.

The distances we now have to travel become so great that I shall not attempt to give them; you can, however, form an idea of the tremendous spaces we are traversing when you consider that each successive planet is nearly double as far from the Sun as the preceding one.

In the place where, by Bode's law, we should expect to have found the next world, we find a group of small planets, ranging in size from about 200 miles in diameter down to only a few hundred yards. They pass through nearly the same point once in each of their periods of revolution round the Sun, and it has been suggested that they are fragments of a great globe rent asunder by some mighty catastrophe; over 400 of these little worlds have been discovered and have received names, or are known under certain numbers.

We now continue our voyage over the next huge space and arrive at Jupiter, the largest and grandest of the planets. This world is more than 1000 times larger than our Earth, its circumference being actually

greater than the distance from the Earth to the Moon. It has seven moons, and its year is about twelve times as long as ours. Pursuing our journey, we next come to Saturn. It is nearly as large as Jupiter, and has a huge ring of planetary matter revolving round it in addition to seven moons. Further and further we go, and the planets behind us are disappearing, and even the Sun is dwindling down to a mere speck; still we hurry on, and at last alight on another planet, Uranus, about sixty times larger than our Earth; we see moons in attendance, but they. have scarcely any light to reflect; the Sun is only a star now; but we must hasten on deeper and deeper into space. We shall again, as formerly, have to go nearly as far beyond the last planet as that planet is from the Sun. The mind cannot grasp these huge distances. Still we travel on to the last planet, Neptune, revolving on its lonely orbit; sunk so deep into space that, though it rushes round the Sun at the rate of 22,000 miles per hour, it takes 164 of our years to complete one revolution. Now let us look back from this remote point. What do we see? One planet only, Uranus, is visible to the unaided eye ; the giant planets, Jupiter and Saturn, have disappeared, and the Sun itself is now only a star; practically no heat, no light, all is

darkness in this solitary world; the Sun is 1000 times smaller than we see it from the earth, and gives, therefore, only one-thousandth part of its heat and light. Thus far have we gone, and, standing there at the enormous distance of 3,000,000,000 miles from our starting-point, we can begin to comprehend the vast limits of the solar system; we can begin to understand the ways of this mighty family of planets and satellites. But let us not set up too small a standard whereby to measure the Infinity of Space. We shall find, as we go on, that this stupendous system is but an infinitesimal part of the whole universe.

Let us now look forward along the path we are to take. We are standing on the outermost part of our Solar System, and there is no other planet towards which we can wing our flight; but all around are multitudes of stars, some shining with a brightness almost equal to what our Sun appears to give forth at that great distance, others hardly visible, but the smallest telescope increases their number enormously, and presents to our mind the appalling phantom of *immensity* in all its terror, standing there to withstand our next great step. How are we to continue on our journey when our very senses seem paralysed by this obstruction, and even imagination is powerless from

utter loneliness? One guide only is there to help us, the messenger which flits from star to star, universe to universe; Light it is which will help us to appreciate even these bottomless depths. Now, Light travels 186,000 miles per second, or 12 million miles every minute of time. It therefore takes only about four hours to traverse the huge distance between our Sun and Neptune, where we are now supposed to be standing; but to leap across the space separating us from the nearest star, it would require many years for Light, travelling at 186,000 miles every second of that tlme, to span the distance. There are, in fact, only fifteen stars in the whole heaven that couid be reached, on the wings of Light, in sixteen years!

Let us use this to continue our voyage. On a clear night the human eye can perceive thousands of stars, in all directions, scattered, without any apparent order or design; but in one locality, forming a huge ring round the heavens, there is a misty zone called the Milky Way. Let us turn a telescope with a low aperture on this, and what a sight presents itself! Instead of mist, myriads of stars are now seen surrounded by nebulous haze. We put a higher aperture on, and thus pierce further and further into space; the haze is resolved into myriads more stars, and

more haze comes up from the deep beyond, showing that the visual ray was not yet strong enough to fathom the mighty distance; but let thefull aperture be applied and mark the result. Mist and haze have disappeared; the telescope has pierced right through the stupendous distance, and only the vast abyss of space, boundless and unfathomable, is seen beyond.

Let us pause here for a moment to think what we have done. Light, travelling with its enormous velocity, requires on an average considerably over ten years to traverse the distance between our Solar System and Stars of the first magnitude, but the dimensions of the Milky Way are built up on such a huge scale that to traverse the whole stratum would require us to pass about 500 stars, separated from each other by this same tremendous interval; 10,000 years may therefore be computed as the shortest time which light, travelling with its enormous velocity, would take to sweep across the whole cluster, it being borne in mind that the Solar System is supposed to be located not far from the centre of this great star cluster, and that the cluster comprises all stars visible arrayed in a flat zone, the edges of which, where the stratum is deepest, being the locality of the Milky Way .

Let us once more continue our journey. We have traversed a distance which even on

the wings of light we could only accomplish in many thousands of years, and now stand on the outskirts of our great star cluster, in the same way, and I hope with the same aspirations, as when we paused the last time on the confines of our Solar System. Behind us are myriads of shining orbs, in such countless numbers that human thought cannot even suggest a limit, and yet each of these is a mighty globe like our Sun, the centre of a planetary system, dispensing light and heat under conditions similar to what we are accustomed to here. Let us, however, turn our face away from these clusterings of mighty suns, and look steadfastly forward into the unbroken darkness, and. once more brace our nerves to face that terrible phantom—*Immensity*.

We require now the most powerful instruments that science can put into our hands, and by their aid we will again essay to make another stride towards the appreciation of our subject. In what, to the unaided eye, was unbroken darkness, the telescope now enables us to discern a number of luminous points of haze, and towards one of these we continue our journey. The myriads of suns in our great star cluster are soon being left far behind; they shrink together, resolve themselves into haze, until the once glorious universe of countless millions of suns has dwindled down to a mere point of

light, almost invisible to the naked eye. But look forward: the luminous cloud to which we are urging our flight has expanded, until what, at one time, was a mere patch of brightness, has now swelled into a mighty star cluster; myriads of suns burst into sight—we have traversed a distance which even on the wings of light would take hundreds of thousands of years, and have reached the confines of another Milky Way as glorious and mighty as the one we have left; whose limits light would require 10,000 years to traverse; and yet, in whatever direction the telescope is placed, star clusters are to be seen strewn over the surface of the heavens.

Let us take now the utmost limit of telescopic power in all directions. Where are we after all but in the centre of a sphere whose circumference is 100,000 times as far from us as one of the nearest fixed stars, a distance that light would take over a million years to traverse, and beyond whose circuit, infinity, boundless infinity, still stretches unfathomed as ever? We have made a step, indeed, but perhaps only towards acquaintance with a new order of infinitesimals. Once the distances of our Solar System seemed almost infinite quantities; compare them with the intervals between the fixed stars, and they become no quantities at all. And now when the spaces between the stars are contrasted with the

gulfs of dark spaces separating firmaments, they absolutely vanish away. Can the whole firmamental creation in its turn be nothing but a corner of some mightier scheme? But let us not go on to bewilderment: we have passed from planet to planet, star to star, universe to universe, and still infinite space extends for ever beyond our grasp. We have gone as far towards the infinite as our sight, aided by the most powerful telescope, can hope to go. Is there no way then by which we can continue our journey further towards the appreciation of this infinity? A few years ago we should probably have denied that it was possible for man to go further; but quite lately a new method of observation has been developed, and we will try and use this to continue our flight.

The reason why, to our sight, an object becomes apparently smaller and smaller as it is withdrawn from the eye, until it at last disappears entirely, is that the eye is a very imperfect instrument for viewing objects at a great distance; it can only form an image of an object when that object is near enough to subtend a certain angle, or, in popular language, to show itself a certain size—the rays of light must converge—in fact, the eye cannot single out and appreciate parallel rays: could it do this, objects would not appear to grow smaller as they are removed.

A pencil might be removed to the Moon, 240,000 miles away, and would still appear to the eye the same size as it does here close to you; with perfect vision there would be no such thing as perspective, but, with our present conditions of sight, the result would be inconvenient. We should never be able to see, at one and the same time, anything larger than the pupil of our eye. The beauties of the landscape would be gone, and our dearest friends would pass us unheeded and unseen; everyday life would resolve itself into a task similar to that of attempting to read our newspaper every morning by means of a powerful microscope; we should commence by getting on to a big black blotch, and, after wandering about for half an hour, we might perhaps then begin to find out that we were looking at the little letter "e," but anything like reading would be quite out of the question. We may, therefore, with our limited aperture of sight, be thankful that our eyes have the imperfection of not appreciating parallel rays. But we will now consider how this imperfection may be remedied by science.

There are two different ways of doing this—viz., first, by increasing the amount of light received, by means of telescopes of great aperture; and secondly, by employing an artificial retina a thousand times more

sensitive than the human. Now, the human retina receives the impression of what it looks at in a very minute fraction of a second, provided of course that the eye is properly focussed, and no further impression will be made by keepmg the eye fixed on that object; but in celestial photography, when the telescope is turned into a camera, the sensitive plate, having received the impression in the first second, may be exposed not only for many seconds, or minutes, or hours, but for an aggregate of even days by re-exposure, every second of which time details on that plate new objects, sunk so deep in the vast depths of space as to be immeasurably beyond the power of the human eye, even through telescopes hundreds of times more powerful than the largest instruments that science has enabled us to construct; and yet here is laid before us a faithful chart, by means of which we may once more continue our journey through space. A short exposure will show us firmaments and nebulæ just outside the range of our greatest telescopes, and every additional second extends our vision by such vast increases of distances that the brain reels at the thought; and yet, as we have seen, exposures of these sensitive plates may be, and have been, made not only for seconds, but for thousands and even hundreds of thousands of seconds! And still

there is no end, no end where the weary mind can rest and contemplate; the finite mind of man can only cry out that there is no limit. In spite of all its strivings and groping by aid of speculative philosophy, the finite cannot attain to the Infinite, nor get any nearer to where the mighty sea of time breaks in noiseless waves on the dim shore of eternity.

In this journey through space we have apparentlyexhausted our power of conception of the *extension* of this View. Although we have travelled in one direction only, our flight was applicable to every possible known direction *outwards* into the vast abyss of Infinite space. But there is another path, by which we can also travel with profit to our understanding of this subject, running in the opposite direction—namely, *inwards.* Just as the outward journey seemed to take us towards the appreciation of what our finite senses call the infinitely great, so does this other path appear to intend to infinity, in the opposite direction, leading us to appreciate what is called the infinitely small. We have already considered this direction in View One, under the heading of "Relativity," and by combining these two experiences, we may see still more clearly that our very conception of Space is one of the modes only under which motion or physical phenomena are presented to our consciousness.

VIEW SEVEN

TIME

IN the last View I referred to the mysteries of Time and Space as twin-sisters; they have, as we saw, many aspects in common, and are the two modes or conditions under which all our senses act and by which our thoughts are limited. We arbitrarily divide each of these two mysteries into two parts, which parts are separated from each other, in either case, by a point which has, apparently, as its centre, our very consciousness of living. In the case of Space we call this point the HERE, and on one side of it, as we saw in our last View, we have extension towards the infinitely great, and on the other, intension towards the infinitely small. In the case of Time we call the middle point the NOW, and on one side of this we place the duration of Time towards the future, and, on the other, we place what we call the duration of Time towards the past. In the case of Space we have the here and the *overthere*, equivalent in Time to the present and the *future*, but, though Time and Space are, as it were, twin-sisters, upon whose

combined action depends our very consciousness of living, we do not treat them both equally.

It is a remarkable fact that the human race on this particular world has, in some inexplicable way, come to look upon the future as non-existent until we arrive at, and are able to perceive, with our senses, what is happening there; this is all the more inexplicable when we realise that in traversing Space we certainly have to *move* to get anywhere, but in traversing Time we have nothing equivalent to movement. This curious way of looking upon the future as non-existent, may be another sign that our race is still in its infancy, but is more probably caused by human beings having always hitherto looked upon Time not only as a reality but as actually moving. or extending along a line from past to future eternity; whereas, under our present outlook, we have no consciousness of the existence of Time except by intervals between successive thoughts; our consciousness of the very existence of Time is based upon our Physical Ego repeating the *present*, by saying to itself the words, Now—Now—Now; but there is nothing that can be called movement in this, any more than if you are standing still and saying, Here—Here—Here—relating to Space. Time is, as it were, "marking time," and as the present in time is common to all space, Time is "marking

time" everywhere, and the Now therefore includes the whole of the past and the whole of future eternity cverywhere. We shall get a clearer understanding of this later on; meanwhile, we aro face to face with the fact that we look upon the future as non-existent.

'l'his curious state of things is probably only accidental to the present stage of development of the human mind, and may, at any time, be rectifiod by perhaps either a slight rearrangement of that slender network of nerves upon which depends our faculty of thinking, or the joining together of a few microscopical filaments attached to the cells in the grey cortical layer, or even a single bridge thrown across from one convolution to another of the brain; a very slight alteration would open up to our consciousness the present existence of the future. The prime perceivable difference between our brains and those of the Apes and lower animals is the larger number of enfoldments, or convolutions, that are developed by the Human. Each new line of thought, or sequence of thoughts, requires, and is provided with, a new wrinkle or small convolution, and it probably only requires the attention of the human face to be fixed, for a time, on the consideration of this subject, to evolve the slight alteration, or bridge, necessary to enable us to see that the future, as also the

past, does actually exist and is included in the Now. It may make this a little clearer to consider that if you maintain that, in traversing the duration of time, the future does not exist until you arrive there, you should also in fairness insist that, in travelling through the extension of Space, your destination, say Rome, does not exist until you get there and can see it with your senses.

As we have, in the former six Views, been gradually mounting above the mists and illusions of our everyday thoughts, and can look through our Window with, I hope, a clearer vision, I shall venture in this present View to carry the subject of the *Future* still further, and show that, just as we have now before us and can read the papyri which were written 5000 years ago, so it is possible to conceive that books, written and being written and printed 5000 years hence, are *at present* in existence, and that it is even possible the human race has actually already read them; whether we shall be able to see them and read them in our own lifetime may be open to question; that may again depend upon the development of special cross-circuiting of brain filaments. Meanwhile, in order to carry our present View to the utmost limit of our conception, in a manner somewhat similar to what we did for Space, I will again ask you to join me in a thought-

flight towards the appreciation of this second great Mystery.

With this object in view we will first consider the human senses of sight and hearing, commencing with sound, or the vibrations which affect the tympanum of the human ear. Sound travels in air at about 1130 feet per second, and if the vibrating . body, giving out the sound, oscillates sixteen times in one second, it follows that, spreading over this 1130 feet, there will be sixteen waves, giving a length of about 70 feet to each wave. This is the lowest sound that the human ear can appreciate as a musical note, and is, what may be called, the fourth Octave above one vibration in one second. When the number of vibrations in a second sinks below sixteen, the ear no longer appreciates them as a musical sound, but is able to hear them as separate vibrations or beats. The easiest way of illustrating this is by means of a revolving disc, with sixteen holes pierced at regular intervals round the edge, and a jet of high-pressure air, which is forced through each of the holes successively as they revolve. When the disc does not quite complete one revolution in a second, only fifteen puffs come to the ear in a second of time, and they are heard as puffs; but when the rate reaches one revolution in a second, the

sound, as if by magic, changes into the lowest musical sound. The same result may be obtained in a more pronounced form by means of explosions or pistol shots; when these are slow and heard separately, they are painful and almost unbearable to the ear, but, as soon as their rapidity, namely, at sixteen per second, gets beyond the power of the ear to differentiate between the explosions, the impression, as if by magic, changes into a continuous or musical sound, like a thirty-foot pipe note of an organ.

To go back to our disc. The octave above this lowest musical note is obtained by doubling the rate of puffs, namely, by revolving the disc twice in one second, and the next octave by revolving four times in a second, and so on, doubling each time, until, at about the thirteenth octave, the sound has become so high that the majority of listeners cannot hear it, and fancy it must have stopped, whereas a few will still be saying: "How shrill it is!" At last, at about the fourteenth octave, when there are 20,000 beats to the second and each wave is about half an inch long, it passes beyond human audition, and, although we can show that the air is still vibrating, all is silent, the human ear being incapable of hearing so many beats in a second even as a continuous sound, though I have evidence to show that

many insects can hear probably considerably beyond this limit. It is, however, possible to make these higher vibrations perceptible to our senses by means of what are called sensitive flames: we can actually, by these, measure the length of these silent waves, and as we know the rate at which they travel, we can at once compute the number which occur in a second of time, and thus ascertain their pitch. By this means we can follow for about three more octaves above the audible limit, namely, up to 160,000 pulsations per second, with a length of wave of one-twelfth of an inch.

Two and a half octaves above these numerically, *i.e.* at about the twentieth octave, we reach the frequency of Electro-Magnetic Rills, used by the Marconi System of wireless telegraphy, which pulsate at about 950,000 per second, and have a wave-length of something like 1000 feet. The reason for this great increase in length of wave is caused by these frequencies being propagated in the Ether at the rate of 186,000 miles per second, instead of, as with sound waves, in the air, at only 1130 feet per second. We can trnce these particular frequencies, called, after their discoverer, Hertzian waves, for about fifteen octaves, when we arrive at the frequency of 32,000,000,000 in a second, with a wave-length decreased to a quarter of an

inch; we can render the effect of these waves visible, but have no physical organ by which we can feel these pulsations. After this, however, we get into the region of frequencies which, though still of exactly the same kind, we know and can feel as Radiant heat; these are situated in the next fourteen octaves, and bring us up to those subtle frequencies which affect another of our sense organs, and which we appreciate as light; these we have already seen have the enormous frequency of 530,000,000,000,000 pulsations per second for red light, up to 930,000,000,000,000 per second for violet, and having wave-lengths so small that it takes 40,000 and 70,000 of them respectively to cover one inch in length. There is only a little over half an octave that the eye can appreciate as light, and then all is darkness ; but we can still go on further by the help of Science: beyond the violet we have the actinic or chemical rays, which are used in photography, and which enable us to trace the frequencies for a further two octaves. Beyond this we cannot pierce with our present knowledge; but there may be, and probably are, latent in our nature, senses which, properly developed, will be able to appreciate still more subtle vibrations, and organs which, perhaps, even now are being prepared for the reception of these influences.

We have no organs yet developed for receiving and appreciating what are called Wireless waves, but we have already been able to devise physical Receivers, of wonderful sensitiveness, for them and other waves of the same nature, such as those of Radiant heat. In the case of Radiant heat, the Bolometer invented by Professor Langley has been able to receive and record a change of temperature of the one millionth of a degree Centigrade, and can easily make visible the heat of a candle at a distance of one and a half miles. In wireless telegraphy also the Receiver, perfected by Marconi, is affected by rills, made by a splash of electric discharge, over 3000 miles away. If our eyes were sensitive to these frequencies, both of which are composed, as is also light, of electro-magnetic rills, we could see anything that was happening anywhere in the world, for they go through matter as though it did not exist, as light passes through glass; indeed, if our region of Sight waves was only put an octave lower we could not use glass in our windows, it would be too opaque, we should be obliged to have our windows made of thin slabs of carbon or other substances permeable to Radiant heat waves. Science indeed steadily points to electricity and magnetism being a form of motion, and it may be that in these invisible rays we may

some day discover the nature of those mysterious forces; and, even far beyond those, as suggested in View Four, we may in the not far distant future be able to appreciate Physical Life itself as a mode of frequency.

We want, as it were, a special "Time Microscope," which I have already referred to, to examine these vibrations, and a method similar to that already mentioned in "Space," under Celestial Photography, by which we may traverse and examine hundreds or thousands of octaves by each second of exposure; for, although the path extends to infinity, we have already arrived at the utmost limits of our finite senses, and find that after all we can only appreciate fifty-one octaves, a few inches only, as it were, along the line of Infinite extent, reaching from the finite up to the Reality; and even so it must be borne in mind that we have only travelled in one direction, whereas the path we have taken extends in the opposite direction also to infinity. We started with sixteen vibrations in a second, as the lowest number of beats we human beings can appreciate as a musical sound; let us now descend by octaves. The octave below is eight vibrations in a second, and there are probably many animals that can only hear these as a musical sound; the next octave is four, then two, and then one vibration in a

second. But we do not stop there; the octave below this is one vibration in two seconds, then in four seconds, eight seconds, sixteen seconds, and so on, until it is possible to conceive that even one frequency in a million years might be appreciated as a musical sound, or even as one of the colours of the spectrum, by a being whose time sensations were enormously extended in both directions, but still finite.

Once more we must call a halt. Our finite minds become bewildered in attempting even to glance at these infinities of time.

We measure space by miles, yards, feet, and inches; we measure time by years, hours, minutes, and seconds; and by these finite units we try to fathom these two marvellous infinities. With our greatest efforts of thought we find, however, that we can get relatively no distance whatever from the HERE of Space and the NOW of Time. It is true that the present, as a mathematical point, appears to be hurrying and bearing us with it along the line stretching from the past to future eternity, but in reality we get no further from the one nor nearer to the other. Let us change our viewand examine this subject under a different aspect.

First of all, look round a room and note the different objects to be seen. Even in a small room we do not see the objects as they really

are at this instant, but only as they *were* at a certain fixed length of time ago. The present time is common to every point in space and each person is in the present, but only to his own perception; to everyone else in the room, each individual is, at this moment, being seen acting in the past; those objects which are further away are being seen further behind in point of time than those that are nearer; in fact, however near we are to an object, we can never see it as it is but only as it was. We are dealing with very minute differences here, they being based upon the rate at which light travels; but they are differences which are known with a wonderful degree of accuracy.

We have here another example of how perception without knowledge leads to false concepts. When anyone views an extended landscape, he thinks that his sight shows him that the same point of Time, which he is experiencing, is common to every man, animal, plant, or material visible there, but we know now that he is seeing every part of that scene in the past compared with himself. Just as all objects therein are situated at separate distinct points of space, so to our vision the objects of that scene are acting or existing in different epochs of time. An Artist gives us on a flat surface a picture of that landscape, and his representations of all objects in that

scene appear therefore to us as being in the same moment of Time, but to get that effect he has to draw objects at a distance smaller than those close at hand; a fly in the foreground has to be drawn larger than a horse supposed to be in the distance, though both are on the same flat surface; they have the same parallax and are therefore the same distance from the observer, and as this produces a similar image on our retina, we accept it though we know it is only a make-believe; it serves its purpose by giving us an impression on our retina which we have learnt to interpret as representing that landscape, but such a picture would indeed be a marvel of absurdity to a being who had perfect sight, such as we have already referred to, and who could appreciate parallel rays; in such a vision there would be no perspective, no vanishing point in perception.

Now let us take a wider landscape. The Moon is 240,000 miles distant. We do not, therefore, ever see her as she is but as she was 1¼ seconds ago. In the same way we see the Sun as he was eight minutes ago, and we see Jupiter as he was nearly an hour ago. Let us look still further to one of the nearest fixed stars. We at this moment only see that star as it was more than ten years ago; that star may therefore have exploded or disappeared ten long years ago, and yet we still

see it shining, and shall continue to see it *there* until the long line of light has run itself out; all around us, in fact, we see the appearance of blazing suns not as they are now but as they were thousands of years ago, and, by the aid of the telescope and of our sensitive plate, we are only now recording the light which started from clusters and firmaments probably millions of years ago.

Now let us take the converse of this. To anybody on the moon at this moment the earth would be seen from there not as it is, but as it was 1¼ seconds ago, and from the sun as it was eight minutes ago, and if we were in Jupiter, and were looking back, we should, at this particular moment, be viewing what was happening on this earth, and seeing what each of us was doing an hour ago. Now let us go in imagination to one of the nearest fixed stars, and looking back we should see what was happening ten years ago; going still further to a far-off cluster, the light would only just now be arriving there, which started from the earth at the time when man first appeared; or we might go to so remote a distance that the scene of the formation of the Solar System would be only now arriving there, and all the events which have taken place from that remote time to the present would, as time rolled on, reach there in exactly the same succession as

they have happened on this earth; and remember that we should be looking, from that great distance, at all these past events with the same intuitional advantage as though we were actually present here in time, for however near we are to an object, we never see it as it is but only as it was in the past.

Let us but turn to any point of space and we shall find at each point, according to its remoteness, the actual scenes of the past being enacted, in fact it may be said that throughout infinite space every event in past eternity is now indelibly recorded.

A murder committed hundreds of years ago, in a country house, may never have been found out, the criminal and his victim have alike turned to dust, the blood has been washed from the floor, the very house and its surroundings have crumbled and disappeared, and in their place a waving corn field is all that can be seen, but at this very moment if we were at a certain point in space, we should now be witnessing there, the whole actual living scene from beginning to end, as though we were present *here* hundreds of years ago: the murderer standing over his victim, the knife driven in and the blood gushing out. If we went further away we should at this same moment be seeing the criminal just arriving and knocking at the door of that house, then going upstairs into the room,

and the same terrible scene with all its minutiæ would again be enacted. From a point still further removed, we should now see him, say, having lunch at a country inn some miles away, concocting his villainy, then he would be seen walking across the fields towards the house, again knocking at the door, mounting the staircase, and once more would that murderous scene be enacted before our eyes, and so on for ever; the scene, with the house and its surroundings, have indeed been completely swept away from the present *here*, but the whole tragedy will always be acting in the future *there* in the presence of the Reality.

Let us now come, in imagination, towards the earth, from some far-off cluster of stars. If we traverse the distance in one year, the whole of the events from the formation of this world would appear before us, only thousands of times quicker. Make the journey in a month, a day, an hour, a second, or a moment of time, and all past events, from the grandest to the most trivial, would be acted in an infinitesimal portion of time.

When we have fully grasped this we recognise that Omniscience is synonymous with Omnipresence, and some may find, in this thought, a glimpse of that Great Book wherein are said to be registered every thought, word, and deed, which, in the direction of the

Reality, has helped to nourish, or, in the direction of the shadow, has tended to starve the personality of each one of us; for we know that every word we utter, or that has been uttered from the beginning of the world, and every motion of our brain connected with thought is indelibly imprinted upon every atom of matter. If our sense of perception were greatly increased we need not go to Palestine to see on the rocks there the impressions of the image of Christ and His disciples, or of the words they uttered as they passed by, but any stone by the wayside *here* would show His every action and resound with every word He uttered. In fact, every particle of matter on this earth is a witness to that which has happened, every point in space and every moment of time contains the history of the past in the smallest minutiæ The *Here,* embracing all space, and the *Now,* embracing all time, are the only realities to the Omniscient.

Let us once more change the scene and we may grasp even more clearly that Time and Space are not realities but are only modes or conditions under which our material senses act. A tune may be played either a thousand times slower or a thousand times quicker, but it still remains the same tune, it contains the same sequence of notes and proportion in time, the only characteristics by which we

recognise a tune. And so in the same way with our sense of sight, an event may be drawn out to a thousand times its length or acted a thousand times quicker, it is still the same scene. An insect vibrates its wings several thousands of times in a second and must be cognisant of each beat, whereas we have seen that we, with our Senses of Sight and Hearing, can only appreciate respectively at the most seven and sixteen vibrations in a second as separate beats. That insect must therefore be able to follow a flash of lightning under the conditions of a Time microscope magnifying a thousand times compared with our vision. The whole life of some of these insects extends over a few hours only, but owing to their quick unit of perception it is to them as full of detail as our life of seventy years; but to them there is no day and night, the Sun is always stationary in the Heavens, they can have no cognisance of Seasons.

I have already referred in View One to the curious results of increasing our unit of perception by a Time Microscope, and I will now carry the investigation of this subject a step further.

As conceptional knowledge is based on perceptional knowledge, and we can only perceive about six times per second, and as the principal forms of knowledge are gained through the eye, we are conceiving progress

in phenomena under a very restricted outlook; we cannot recognise such slow motions as, for instance, the hour-hand of a watch, the growth of a tree, or rise of the tide, except by noting the change that has occurred after a long interval; there is therefore a whole world of events which we cannot see. Owing to this limit, in our unit of time perception, we also cannot perceive events which are taking place beyond a certain quickness, they become blurred and give the impression of continuity, and constitute another world of events lost to us. For the same reason there is a whole world of sensation lost to us by our limited unit of sound perception; we cannot follow separate sound-events if they occur quicker than sixteen in a second, beyond that they become blurred and give the impression of continuity. If, on the other hand, our units of perception were increased a thousandfold, as is probably the case with some insects, our conscious lives would contain a thousand more events than they do at present, and, as the consciousness of length of life is dependent upon the number of events that have been perceived, we should under these conditions have passed on this earth a life equivalent to, say, 70,000 years under our present restricted unit; every second of that long period would have been as full of events for us as is a second in our

present life of seventy years. If, on the other hand, our unit of perception were decreased a thousandfold, our length of life, based upon perception of events, would be no longer than 25½ of our present days; if our life were actually reduced to that period (so as to regain our present units of perception) we should be old and grey-headed before the sun had risen for the twenty-fifth time since our birth. If our unit of perception, with our length of life, were again reduced a thousandfold, the whole of our life of seventy years would now only be equal to forty-three minutes, and, in the whole of that life, we could only see the sun move ten degrees, namely, twenty of its own diameters in the heaven; if we were born, say, at noon on midsummer's day, we could never have any idea of anything but daytime, and neither our fathers, nor grandfathers, nor great-grandfathers for fifteen generations before them could have seen the sun rise; but there would have been a tradition, handed down from a far distant past generation, that a long time ago, beyond the memory of man, there was no sun at all, everything was pitch dark, and that time was called the "Great Shadow." If their records could have gone still further back for the same length of time they would have heard that, before the "Great Shadow," the sun was always shining in the

heavens, and that that great "Sun" day lasted twice as long as the great shadow.

To understand more clearly this subject of Time perception let me put another aspect before you; we are looking, say, at an insect whose wings are beating several thousand times per second, and, with our vision limited to six times per second, it would be impossible to count the number of hairs on that wing, or to see which of those hairs were split, or were bent from the straight, but, if we travelled away from that insect into space at the rate of light, and were looking back, the present would then always be with us; the wing, although still vibrating at that enormous rate, would appear to be stationary, and so would every other moving thing on the earth, however quick its movement, and everything would continue in that motionless state for a million years, provided we continued our flight with the rays of light. If we travelled a little slower than light, say one minute less in a thousand years, the same scene would be presented to us, but, that which was acted upon this earth during one minute of Time, would now take a thousand years to accomplish; the swiftest railway train would appear standing still, it would take 5¾ days and nights to cover each inch of ground. It is thus possible to again understand how the flight of a bird or the lightning

flash might be examined under conditions of time which would lead to the discovery and tracing of even the principle of life itself. But let us go one step further and increase our flight beyond the rate at which light travels: scenes would now progress in the opposite direction to that which we are accustomed to; men would get out of bed and dress themselves at night and go to bed in the morning; old men would grow young again; tall trees would grow backwards and enter the earth, embedding themselves in the seed, and the seed would rise upwards to the branch that nourished it; the blood would turn into chyle, into food in the stomach, into the piece of meat, which would be transferred from the mouth to the plate, and would then be cut on to the joint, the joint would go down to the kitchen and be uncooked, would be carried to the butcher to be cut on to the carcase, and the animal would come to life and go out into the fields. Human bodies would be formed in the ground from the dust of the Earth, passing through what we call corruption to incorruption, the dead would be taken from their graves, brought back to their homes and put to bed; the Doctor would arrive, a miracle would happen, the patient would come to life; though this would hardly be a feather in the cap of the Doctor, as it would be seen that

the medicine came out from the mouth of the patient, would be put into bottles to be thrown away, and it would be the Doctor who had to pay the Fee, and the bigger the Doctor the bigger the Fee he would have to pay. The future would in fact change places with the past, the effect would give birth to the cause as presented to our finite senses, and, though it is difficult to realise, it is indeed just as true, or untrue, that we come into this world through the grave, instead of in the way we are accustomed to, because to the Reality there is no change, the Here and the Now comprising all beginnings and ends, all causes and effects.

In this flight on the wings of light we did not in reality depart in the least from the Here, because there is no such thing as space, it is all included in a mathematical point, the Here; and as the whole of time is included in the Now, the Future, however remote with all events therein, is existent in the present; the writers of books 5000 years hence are therefore writing them now, and the Human Race has read and is reading them *now*; we have always hitherto maintained that these things are only "going to happen" 5000 years hence, but in reality all events in the future are events in the same Now in which we are living at the present moment, and, as it is just as true, that time is flowing from the

Future to the Present and on to the Past, as in the contrary direction (of our present outlook), so it is quite conceivable that we may some day, in the not far distant future, not only realise that the future exists already, but that we may even be able to handle and read the books written 5000 years hence, in a similar manner to that which enables us now to handle and read those which were written 5000 years ago.

VIEW EIGHT

CREATION

IN our first View we saw the necessity of clearing away the weeds, the moss, and the lichen from the stem of our Real Personality before that Transcendental Self could send forth fresh buds for the advancement of *conscious* thought to higher levels; we found that the first step towards this clearing the approach to our window, was to recognise that a knowledge of the Truth was to be gained by the use of "Introspection" rather than by Intellectualism—to realise, in fact, that it is not we, with our intellects, who are looking out upon Nature, but that it is the Absolute looking into us and ever trying to teach us divine truths concerning the "Reality of Being." We saw that the phenomena, which our senses would have us believe to be the reality or solidity of our material surroundings, are illusions created by the fact that those senses are limited in their perception to that which is conditioned in Time and Space, necessitating *motion* as the basis of our perceptions, and that, when the

rate of motion exceeds our units of perception, we have the impression of continuity of events, which we accept as the objective existence of matter; we also saw that the duration of Time and extension of Space had no existence for us apart from those senses, our very consciousness of these two non-realities depending upon "relativity"—they could, in fact, be increased or diminished indefinitely, without our knowing that any change had been made.

In our second View I attempted to take another step forward by showing how, by means of this "Introspection," it was even possible to understand that these two limitations might be eliminated from consciousness; we then realised that the whole Physical Universe is but a thin film, set up by our finite Senses, between our Consciousness and the "Reality of Being"; we saw that this could only be understood when, by the Mystical Sense, we realised that physical phenomena were but symbols or shadows of the Reality or Noumenon underlying them.

In our next View I gave an example of the use of Mystical and Symbolical thought, leading, in the fourth View, to the subject of Everlasting Life and the Efficacy of Prayer, wherein I tried to show that by examining the phenomena of Nature, as depicted on the Physical Film, it is possible to reach a point

where we may even feel that we are actually listening to, or having divulged to us, the very thoughts of the Absolute. This led to the next View, where we examined the Physical Film itself, and this we analysed in the next two Views into those component parts, by means of which this Film presents to our senses the impression of the whole Physical Universe as an objective reality.

We have seen that it is the Invisible which is the Real, that the visible is only its shadow; that the Invisible, as distinguished from the Visible, is not in a place apart from the Physical, but is the Reality of which the visible constitutes the boundary lines or planes in our consciousness, as lines and planes are the visible boundaries of solids. The Kingdom of Heaven is not a locality but a *state* of Divine "loving and knowing communion"; it is within us in the sense that we are interior and not exterior entities of the "Reality of Being."

We have now arrived at a point where we can better realise that the Absolute cannot be localised or bounded by space, and must be Omnipresent—cannot be conditioned in Time, and must therefore be Omniscient—the Here comprising all Space, and the Now all Time in the "Reality of Being."

With these conclusions before us I will ask you to form a new conception of

Creation. All creation around us is the materialisation of the Thought of the Deity. He does not require time to think as we do—the whole of the Universe is therefore one instantaneous Thought of the Great Reality; the forming of this world and its destruction, the appearance of man, the birth and death of each one of us are absolutely at the same instant; it is only our finite minds which necessitate drawing this Thought out into a long line, and our want of knowledge and inability to grasp the whole, which force us to conceive that one event happened before or after another. In our finite way we examine and strive to understand this wondrous Thought, and at last, a Darwin, after a life spent in accumulating facts on this little isolated spot of the Universe, discovers what appears to be a law of sequence, and calls it the evolution theory; but this is probably only one of countless other modes by which the *intent* of that Thought is working towards completion, the apparent direction of certain lines on that great tracing board of the Creator, whereon is depicted the whole plan of His work.

Let me give a simple example of Creation by a "word," which even our finite minds can grasp. When I utter the word *Cat,* it starts a practically instantaneous thought in

your minds, the power of that thought being dependent upon the knowledge you have gained. If you analyse it you will find that, though practically instantaneous, it comprises all the sensations you have ever felt on that subject throughout your life. It commenced, perhaps, when you were only a year old, and, sitting on your mother's knee, your hand was made to stroke a kitten, and you felt it was soft and it gave you pleasure. Later on, when you were older, you had it in your arms, and you felt the fust intimation of that wonderful "*στοργή*," which manifests itself in most children in their love for dolls; you found it delightful to cuddle and that it purred. Later on, you found that it played with a reel of cotton, and that it could scratch, make horrid noises, and countless other things, which not only make up the life of a cat, but connect it with the world around us. All these thousand and one facts are now drawn out, by analysis in Time and Space, into a long line, and are placed one in front of the other; but the thought started by the word Cat was a fair example of an instantaneous creation.

One other example of an instantaneous thought. Let us suppose a large room fitted with, say, a hundred thousand volumes, comprising all the knowledge gained by every Specialist in every Science concerning the plan

of Creation. In our finite minds, under the limits of Time and Space, the word representing the contents of that library would start, when uttered, an instantaneous thought analogous to that of our last example, according to the knowledge that each individual had already acquired of the contents of those books; but this knowledge had only been gained by taking down each volume separately and reading one book at a time, beginning at the beginning and taking each page and each word in succession, and a lifetime would not suffice to enable us to read them all; whereas, if our knowledge were *complete*, the word representing the contents of that room would start an instantaneous thought, comprising not only every book, but every chapter, page, word, letter, and punctuation contained in that library, or in one which comprised all knowledge from the beginning to the end of Time.

It is a well-known fact that at the approach of death, when the perceptive senses are completely, or almost completely, in abeyance, as in the "self-forgetting" referred to in "The Vision," the duration of Time appears to have no reality; in numerous cases of drowning, where the person has been no more than one or two minutes under water, the whole of a long life, with every forgotten trivial occurrence and the multitude of thoughts

attached thereto, have been brought vividly before the mind, as it were, instantaneously; those also who have been put under nitrous-oxide gas, though the life of the body is not affected, know how, with departure of sense perception, the sense of Time is completely annihilated. I have myself experimented under such conditions, and attempted to realise the duration of time by counting steadily, one, two, three, four, &c., and had no knowledge whatever that between, say, "four" and "five" there was a complete hiatus of several minutes when, for me, time had vanished; I was still counting steadily when the anresthetic had passed away, and it was quite impossible to realise that such time had elapsed, as I had not reached more than the twelfth count, whereas, according to the time expired, I should have reached the fiftieth or sixtieth. A number of examples of what may be called instantaneous thoughts created in the mind of a sleeper have been collected, and many of us have had similar experiences. I give one as an example: "Maury was ill in bed and dreamed of the French Revolution. Bloody scenes passed before him. He held long conversations with Robespierre, :M:arat, and other monsters of that time, was dragged before the tribunal, was condemned to death, and carried through a great crowd of people, bound to a plank.

The guillotine severed his head from his shoulders. He woke with terror to :find that a rail over the bed had got unfastened and had fallen upon his neck like a guillotine, and, as his mother who was sitting by him declared, at that very moment."

In the above case the whole scene was started instantaneously in his brain, but in waking his mind analysed it in Time and Space and spread it out into a long historical record. The opposite process to this, namely, the building up a thought-picture, is what we do every day when we form and combine our conceptions under the dominion of Time and Space, until we have accumulated in our minds a multitude of concepts which form as it were a single subject, somewhat analogous to a painter when he has completed his picture, a writer his book, an architect his house, or even a mechanic his machine. An interesting example of a musician constructing a thought-picture is given by Mozart himself :

"When I am all right and in good spirits, either in a carriage or walking, and at night when I cannot sleep, thoughts come streaming in and at their best. Whence and how I know not, I cannot make out. The things which occur to me I keep in my head, and hum them also to myself—at least others have told me so. If I stick to it, there soon come,

one after another, useful crumbs for the pie, according to counterpoint, harmony of the different instruments, &c. This now inflames my soul, that is if I am not disturbed. Then it keeps on growing, and I keep on expanding it more distinctly, and the thing, however long it be, becomes indeed almost finished in my head, so that I can always survey it in spirit like a beautiful picture or a fine person, and also hear in imagination, not indeed successively, as by and by it must come out, but all together. That is a delight! All the invention and construction go on in me as in a fine strong dream, but the overhearing it all at once is still the best."

With these illustrations before us may we not carry the analogy even further, and see that, as our conception of a Cat was made up of numberless small acquisitions of knowledge, some of which had to be discarded, or eliminated as errors, from our minds as our knowledge grew, and as each true fact became confirmed and impressed upon our brain it made itself a *permanent* record and became a centre to be used for gaining further knowledge; so in this wonderful Thought of the Great Reality, whose mind may be said to be omnipresent, each individual soul is a working unit in the plan of Creation; each unit as it gains a knowledge of the Will of the Deity forms for itself a *personality* helping

forward the work towards its fulfilment; without that knowledge there can be no personality, no unit in the great completed thought, no life hereafter.

The True Life is fulfilled by him who has progressed so far in the knowledge of the Divine as to realise that he is the offspring of the Absolute, anJ therefore stands face to face with his Transcendental Personality, his *Χρίστος*, of which the Physical Ego is only the outline or boundary form visible in the physical universe. Each individual has free will to define his own boundaries, his own limitations; he builds up the walls of the house in which he lives, and he has power to brick up or open out the windows through which he may see the Truth; happy are those whose windows are open, but many, alas, choose to make the wall opaque by confining their attention to the physical shadows, or by strangling their spiritual intuition and preventing all advance in thought by blind subservience to obsolete dogmas.

We are instruments of Divine purpose in the scheme of Creation. Each individual Physical Ego seems to be a Micro-Cosmos, imaging the Universe, the Macro-Cosmos. As the phagocytes, the policemen of the blood, flock to a breach in the human body to overcome any invasion of the enemy, whether poisons or bacteria, which would

otherwise detract from that progress of cell formation upon which the scheme of human life depends, so do the true lovers of the Divine meet, by active resistance, any attempt of the enemies of the Good, Beautiful and True to retard the advancement of the scheme of Creation to its ultimate goal of perfection. The human body is composed of innumerable cells and several special colonies of cells, which we call organs, each of which has its special work to do, and secretes and discharges special fluids necessary for the welfare of the whole body. All of these cells are alive, and myriads of them are moving on their own account, apparently quite independent of, and in complete ignorance of, the feeling and perception of the whole body; they are, however, microscopical units of that body, and its welfare depends upon their contribution of work; it is, in fact, only through their ceaseless activities that the life in that body is maintained—a phenomenon analogous to that described in the simile of a Forest Tree in View Four. So are we integral parts of the scheme of Creation, and each act, either in accordance with the Divine purpose or the reverse, is helping forward or retarding the completion of that Thought, though like the cells we are ignorant of the end which Creation has in view.

In this life we seem indeed to be only, as

it were, in embryo! The study of embryology has lately shown us clearly how the clothing of our Physical Ego has been formed, during the past millions of years, from the lowest forms of life. Each one of us has, during what may be called his lifetime, gone through all the different stages of evolutionary development which, since the beginning of life on this planet, have been employed to build up the human body in its present form. Embryology has shown us that, during gestation, each human embryo is a *replica* of the past; it passes through the different Imago stages from protoplasm to man, being unrecognisable at certain stages from a monad, an amooba, a fish with gills, a lizard, and a monkey with a tail and dense clothing of hair over the whole body. The human embryo has also, at an early stage, the thirteenth pair of ribs, which is found in lower animals and is still seen in a rudimentary form in anthropoid apes, but which disappears from the human embryo before birth. Each generation, under evolutionary development, will witness a further advancement in the clothing of the Physical Ego, until it may be conceived that a hundred thousand years hence our present stage of development will be seen only as one of the stages through which the embryo has to pass before birth at that distant time. May we not even glimpse at the future to which

evolution is carrying us? For in any of these stages we see organs forming whose use only comes into play long after that stage has been passed; so also, in the new rudimentary forms of thought which are started by every fresh discovery may we not some day be able to descry the heights which we are destined to attain if we earnestly seek after Truth ?

Radio-Activity has shown us that all forms of matter are but different combinations of one primal brick; by synthesis thousands of new forms of matter, unknown in Nature, are actually now being built up in our laboratories, and the number of such combinations cannot conceivably be limited; so do we also see that all the known forms of energy in nature are interchangeable, one with another, with exactly known equivalents and ratios, pointing to their being only different combinations of one unit of energy. If such is the case, it would seem to follow that there are countless other forces of which we at present have no cognisance, but which may at any time come within our field of investigation.

In our life here we are steadily progressing from the lower to the higher form of being, from the purely Physical towards the Transcendental, each generation starting from a higher level; the boundary line between the Physical and Transcendental is being continually advanced towards the latter, and it

may well be, as I have already suggested in View IV, that we are even now on the eve of discovering a new force, or aspect of Creation, which will open a wider view and give us a clearer knowledge of the goal which we are destined to reach hereafter .

Each generation will, according to the teaching of Embryology, gradually come into the world at a higher stage of development than its predecessors, until the last Physical Ego, at its birth, will coincide with the final stage of development, when there will be no more physical clothing, the disintegration of Matter being completed, and, it can be pictured that at the final consummation, there will be nothing imperfect, no shadow left, that all will be spiritual. The object of Creation would therefore appear to be the population of the Real Universe with spiritual entities, until the whole Spiritual Universe will be taken up by Transcendental Personalities, which will be one with the Reality, and the Great Thought completed.

Once more let us recognise that we are dependent for knowledge of surroundings upon our perception of movements, and that as our conceptional knowledge is based on perceptional knowledge, our thoughts are limited by Time and Space and can only deal with finite subjects. From this arises all our difficulty of understanding the In-

finite; we cannot under our present conditions know the whole Truth; if we could do that we should be able, as it were, to look all round the subject, and Infinity would then be seen to be a pseudo-conception of our finite thoughts. We can only think of one finite subject at a time, and, at that moment, all other subjects are cancelled; we can, in fact, only think in sequences, and, taking the particular Infinities of duration and extension which we have been examining, we can only think of points in Time and Space as existing beyond or before other fixed points, which again must be followed by other points. We cannot fix a point in Time or Space so as to exclude the thought of a point beyond; the idea of an Infinite is therefore a necessary result of the limitation of our a thoughts. The whole Truth is there before us, but we can only examine it in a form of finite sequences. A book contains a complete story, but we can only know that story by taking each word in succession and insisting that one word comes in front of another, and yet the story is lying before us complete. So with Creation; we are forced to look upon it as a long line going back to past eternity, and another long line going on to future eternity, and, with our limitations, we can only think of all events therein as happening in sequence; but eliminate Time and we

become Omniscient, the whole of Creation would be before us as an Instantaneous Thought of God.

Accordingly under the dominion of Time we appear to be in a similar position to that of a being whose senses are limited to one-dimensional space—namely, to a line; we can only have cognisance of what is in front and behind, we have no knowledge of what is to the right or left, we appear to be limited to looking lengthwise in Time, whereas an Omniscient and Omnipresent Being looks at Time crosswise and sees it as a whole. A small light, when at rest, appears as a point of light, but when we apply quick motion, the product of Time and Space, to it, we get the appearance of a line of light, and this continuous line, formed by motion of a point, is, I think, analogous to the Physical Universe appearing to our finite senses as continuous in Time duration and Space extension, though really comprised in the Now and the Here, the whole of Creation being therefore an Instantaneous Thought.

A consideration of our limitation in Space may also be useful to show how impossible it is for us to hope to see by our senses the Reality or by our thoughts to know the Spiritual. Our senses and thoughts are limited to a Space of three dimensions, and we can therefore only see or know that part

of the Absolute which is or can be represented to us in three dimensions; a being whose senses were limited to a Universe of one dimension—namely, a *line,* could have no real knowledge of another being who was in a Universe of two dimensions-namely, a *flat surface,* except so far as the two-dimensional being could be represented within his line of sensation; so also the two-dimensional being, on a *plane,* could have no true knowledge of a being like ourselves in a Universe of three dimensions. To his thoughts, limited within two dimensions, a being like ourselves would be unthinkable, except so far as our nature could be made manifest on his plane; so can it be seen that we, limited by our finite senses to Time and Space, and our consciousness dependent upon that limited basis of thought, can only know that aspect of the Reality which can be manifested within that range of thought—namely, as Motion, or what we call physical phenomena.

Let me attempt just one more view before we part, which may make this conception of Creation, as an Instantaneous Thought. even clearer to our finite senses. Imagine a Spectator endowed with the same sense of vision that we have—namely, limited to six units of perception per second, but able to look on, as it were, from outside the Universe, without himself being affected by any al-

teration that takes place in what may be called the flow of time. Consider some of the changes he would witness if Time were gradually eliminated from phenomena. The inhabitants, who at first were seen walking by slow, successive steps, would soon be seen gliding from place to place, the movement of their legs having passed beyond the sense of vision; the next stage would see the inhabitants unrecognisable as human beings when walking, although they would still be visible if they stood still, they would be moving too fast for sight, they would be seen only as lines or bands extended between their points of departure and destination; then day and night would be following each other so quickly that soon the day would only be a flicker of light, till, when the week became equal to one second of the Spectator's time, day and night would disappear as separate phenomena; then the week, the month, and the year would in turn flicker, solidify, or become continuous, and disappear with all the multitudinous events contained therein; human life would then be affected, would flicker, and follow the same course; to the Spectator the birth of each individual would become coincident with his death, and Nations would be seen to rise and progress towards their destination without any evidence of individual existence; the Human Race itself would next succumb,

then the whole of planetary life, then the formation and destruction of Solar Systems, then the gathering together and dissemination of firmaments, and, finally, the beginning and end of the very Universe would coincide. Motion, or Physical phenomena, and therefore Matter, would vanish, and the Great instantaneous Thought be complete. We seem to have been able to glimpse from our Watch Tower, though through a glass darkly, the whole Truth, and to see that the Infinity of Time is a figment of our finite senses and is comprised in the Now. The same treatment, followed by the same result, may be applied to the Infinity of Space, and we again see that all Space is comprised in the Here; it is only by the conditions of our existence in this physical universe, *insisting* on our analysing everything in Time and Space that Motion or Change become the very basis of our Consciousness.

We have seen that the Idea of Infinity is a necessary result of our finite senses, that the only Reality is the Spiritual, the Here and the Now; that the Riddle of the Universe is not to be solved by the *Intellect* but by that method which is employed by those who are earnestly following the "Quest of the Grail"—namely, by realising that our True Personality or Transcendental Ego is an emanation from the Absolute; that we are

one-with Him, and that it is by following the old Hellenic command "Γνώθε σεαυτόν" (Know thyself)—namely, by *Introspection*, that we can hope to attain to the understanding of what is the Reality of Being.

FINIS

PRINTED IN GREAT BRITAIN BY NEILL AND CO., LTD., EDINBURGH.