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Gods and their Place in Buddhism

Thus is he, the Blessed One, the Arahat, the Fully Enlightened, endowed with Knowledge and Conduct, the Happy One, Knower of the World, Peerless Charioteer of men to be tamed, Teacher of Gods and Men, the Buddha, the Blessed One.

—The Meditation on the Recollection of the Buddha.

I

One of the descriptive titles given to the Buddha is that of *satthā-deva-manussānaṃ,* the Teacher of Gods and Men. It is found in the earliest texts of the Tipiṭaka and was accepted by the Buddha Himself. That the expression was no mere oriental hyperbole, but is to be taken in its literal sense, is borne out by the numerous incidents in which devas figure in the Buddhist canonical literature, where, like human beings, they come to the Master for religious instruction. These beings, whose generic name of deva means Shining Ones, appear so often

that there is every justification for an enquiry into their nature and the precise place they occupy in the doctrines of Buddhism.

The Buddhist conception of the universe and of the laws of cause and effect that govern it leaves no room whatever for the idea of a supreme deity in the role of creator or ruler. It is not even necessary for Buddhism to deny the existence of a Creator-god; its philosophy automatically excludes the theory.

> No God, no Brahmā can be found,
> Creator of Saṃsāra's [1] round;
> Empty phenomena roll on,
> Subject to cause and condition.
>
> Visuddhimagga, XIX.

This being so, a deva is not a God in the usual sense, and the word is apt to be misleading through its association with Western theism. If modern man could enter into the spirit of ancient Greek thought and understand the attitude of, say, Socrates [2] towards the Greek gods he would come closer to the Buddhist view of the devas. The likeness is not perfect, for the devas, unlike the Greek deities, are not immortal; but they resemble them in being neither omnipotent nor omniscient. They are not creators of the world, but are themselves subject to the law of causality in much the same way that the Greek gods were subject to *ananke,* the higher law of necessity. They exhibit many of the weaknesses of

human beings, and often less than their wisdom. Their present relatively happy circumstances, as well as such power as they possess, are the result of previous merit acquired as human beings.

They are in fact simply beings of another order of existence, in some ways superior to men but in others at a disadvantage. But before going further into their nature it is necessary to distinguish between (1) *samutti devas* ("by convention"), (2) *upāpatti devas* ("through rebirth") and (3) *visuddhi devas* ("by their purity"). The first class are human beings of high worldly status; kings; ministers and the like. The second are beings living in the *deva-lokas*, or higher spheres, while the third and greatest are human beings who have attained the final degree of self-liberation, and so are known as devas by purification while yet alive. These are the Supreme Buddhas, Silent Buddhas (*Pacceka Buddhas*) and arahats.

In ordinary usage the word deva nearly always denotes the non-human beings of the second order, and it is with them that we are now concerned. But while in the following pages the word *deva* wherever it occurs is to be understood as meaning *upāpatti deva*, it is well to note in passing that the term *deva* in itself has a very wide connotation and makes no fundamental distinction between human and non-human beings where the former are of exalted position. It may be taken to signify nothing more than a superior personage of some kind. It is important that this should be remembered, for just as the superiority of a king lies only in

his position and has no connection with his qualities of intellect or character, so the superiority of a deva rests in the fact of his occupying that position by virtue of his past merits. Like all other beings the deva is revolving in the circle of saṃsāra; he is characterised by the three signs of impermanence, suffering and lack of any essence of selfhood; when the good kamma of the past which sustains the current of his existence as a deva becomes exhausted he must inevitably pass away from that state to be reborn elsewhere.

Another point to be remembered is that although, as has been said, the devas hold an important place. In Buddhist thought they are in no wise necessary to Buddhist philosophy. Everything that Buddhism asserts concerning the nature of reality can be stated with equal truth and force without reference to devas or any other class of non-human beings. Indeed, the view has been put forward that the frequent appearance of the Brahmanical deities as disciples of the Buddha in the canonical literature was intended only to emphasise the falsity of the Brahmanical belief in the power and omniscience of gods. However that may be, it is a fact that Buddhist philosophy is a complete and self-supporting system, requiring no intervention of supernatural agencies, and not capable of being affected by the presence or absence of beings of a non-human order. No matter what kind of sentient beings science may ultimately discover in the universe besides those on our own planet, it is certain that they will all be in their nature subject to the

same laws which Buddhism reveals as governing the life of man. The living organisms on Jupiter, if there are any, must turn out to be different from those on earth in their physical construction, chemical composition and all other external aspects of their being; but even though they must breathe methane and ammonia instead of oxygen, and live in temperatures far below any endurable to organic life on our own planet, the fundamental and universal laws of cause and effect must obtain for them as they do for us. So the number and variety of beings in the cosmos may be multiplied to infinity, yet so long as they are subject to arising and passing away they belong unalterably to the Buddhist pattern of saṃsāric existence. The only kind of being that could be correctly termed supernatural would be one that is eternal, unchanging and not limited by any physical laws. It is the possibility of such a being as this that both Buddhism and modern science deny, but the denial does not go any further than that. As Bertrand Russell has somewhere observed, there is no reason whatever to suppose that man is the highest form of sentient life in the universe.

II

Even before the physicist demonstrated that our familiar

world is not the substantial place it appears to be, but a system of dynamic processes that can be accurately described only in mathematical terms, and existing in an inconceivable four-dimensional complex wherein space is the time between objects and time is the space between events, there were bold scientific thinkers who were able to envisage the possibility of still other dimensions besides those with which we are still grappling in a not-yet-successful attempt to correlate them. It would have been easier for those pioneers to break away from the rigid system which took space and time for separate absolutes if they had lived to see the bewildering world the scientist has presented us with since the advent of nuclear physics and the general theory of relativity. Under the influence of these new—but by no means final—realisations, the once dominant ideas of space and time have faded into subjective conceptions, just as subjective as left and right, front and behind, are in ordinary experience. The only really objective factor ascertainable to us at present is the space-time continuum, which may be thought of as containing an objective record of the motion of every particle in the universe, a history which is known as the world line of the particle concerned. In this way of looking at the universe objects have ceased to exist and their place has been taken by series of events, or causal continua, in the one fixed frame of reference, the four-dimensional space-time continuum.

It has long been known to certain persons, and strongly

suspected by others, that there is not, nor can there be, a means of relating our subjective impressions of the external world to any objective reality existing outside our consciousness. In trying to discover the real nature of the world by sensory perception and intellection we are, as one writer has put it, in no better position than a fish which should strive to become clear as to what is water.

It is all the more strange, therefore, that there should be any lingering belief that the discoveries of science at any given point represent the totality of possibilities in that particular direction. To the philosopher who is engaged in relating all aspects of knowledge and arranging them into a comprehensive system, the contribution made by science is only one of many in the vast sum of data provided by human experience, and it is something that by itself is no more conclusive than are any of the others taken separately. The philosopher may, and should, correct his theories where established scientific fact requires it, but he is under no obligation to imprison his thought behind doors that science itself is fast breaking down.

Among the factors of experience which cannot be ignored is the testimony from innumerable sources all down the ages to the existence of certain beings who appear to belong to a different order of nature, and because of this have been regarded as supernatural. No study of anthropology is complete without them, for in the guise of nature spirits, tribal deities, angels, djinns and the fairies of folklore they are found at the centre of all primitive cults and the earliest

forms of religion. If their appearance were confined to the history of man in pre-scientific ages they could be dismissed as fantasies of the dream-world which primitive man finds difficult to distinguish from reality, but this is far from being the case.

Apart from the phenomena of the modern séance room there have been remarkable instances from the remotest antiquity up to recent times of people finding themselves in communication with non-human entities of various kinds. One of the most impressive of such cases in Europe was that of Emanuel Swedenborg. It was outstanding by reason of the fact that Swedenborg was among the most distinguished scientists of his day, a man of penetrating intellect and unimpeachable integrity who could neither have been subject to delusions nor impelled by desire for notoriety. His possession of clairvoyant powers was demonstrated on more than one occasion, but further than this he claimed that he had received proof of the existence of a heavenly hierarchy, which he made to correspond roughly to the angels, archangels, cherubim and seraphim of Judeo-Christian tradition. He had-seen and talked with radiant beings of different ranks and had passed freely from plane to plane of the extra-terrestrial system they inhabited. In many ways the experiences he described recall those of the mystics of all religions, but aside from the necessarily Christian terminology Swedenborg used in accounting for them in accordance with his own religious ideas, they bear a most marked resemblance to the Buddhist conception of the

conditions prevailing in the realms of the devas.

Are we to suppose that these similarities of mystical or extra-sensory experience are coincidental? Or that they arise from a common infirmity of the human mind?

Or, as a third alternative, may it not be more likely that they are all instances of the same kind of experience, a real experience which requires no further explanation than the possibility of an extension of consciousness to areas outside the particular space-time continuum in which our consciousness normally functions?

To ask where, in the world of material objects, these beings can exist is irrelevant. In a universe where space and time are fused into one concept, and where absolute points of reference have ceased to be and even the exact simultaneity of events is impossible to determine, it were as relevant to enquire *when* they can exist. It is clear that any such question is wrongly posed, because it is based on the assumption that the world we know is precisely as it appears to us, and further that our particular plane of experience is the only possible one, whereas not only is there no valid ground for that assumption but all the inferences are against it.

Considering that the world as we know it subjectively does not correspond to the actual objective world of physics, and that every attempt to bring them together results in a paradoxical situation, we must admit that we already have knowledge of two discrete and seemingly incompatible

worlds, the subjective and the objective, in which somehow we contrive to have made the subjective our natural habitat. In some way the subjective appears to derive from the objective; but since the latter itself becomes subjective when we examine it—or rather, since what we cognise is only another subjective version of it—the truth may well be the other way round. The plain fact is that no individual can establish philosophically the existence of any other being in the world outside his own consciousness. And this absurdity is the only result that formal logic can lead us to.

The model cosmology of Buddhism is not hampered by any such considerations. It is constructed on the assumption that the plane of human experience is only one out of many. The perfection of insight-wisdom is to abolish the artificial constructions of subjective and objective which are both equally void of reality. This being so, it is not important what view we choose to take, and one is as valid as another. For example, the world of an animal's sensory apperceptions is not the same as that of a human being, and this despite the fact that both animal and human being are living in the same objective world and gaining their information about it from much the same kind of sensory apparatus. The world of the fish is completely real and valid, so long as the fish does not strive to become clear as to what is water. Only then does the fish receive intimations of another kind of world outside the one it has always known, but what that world is like must remain an enigma to it unless it can develop a different kind of psycho-

physical organism to enable it to live in the different conditions. The same kind of barriers exist between animals and human beings sharing the same environment; each interprets it differently, according to his capacity and the selective processes of his consciousness. Only the points of contact between the various currents of consciousness of different beings sustain the apparent reality of a world common to all of them.

The Buddha's teaching was concerned with suffering, its cause and its eradication; it was, as He often emphasised, a pointer to the way of release from conditioned existence and was not to be entangled in any of the conflicting views that originate in man's misinterpretation of phenomena. The Buddha Himself did not erect any cosmological system, but only stipulated that any concepts that were held should be in conformity with the general principles of causality. As a consequence, the early Buddhists adopted the Vedic cosmology that was current at the time. It was a typical pre-scientific cosmology, and any attempt to reconcile its physical features with those of the earth as it actually is would be vain. It would also be a misguided effort, for in Buddhist hands the system was never intended to be an exact geophysical account of the world, but a metaphorical description of cosmological processes, and the early Buddhists adapted it to that design when they took it over. For this reason its Buddhist form agrees in certain important respects with a hypothetical model of the universe based on scientific principles. Alone among pre-scientific cosmologies

it has no need of a First Cause, but is self existent and self-renewing by natural laws; it is cyclic, one universe disintegrating and vanishing to be succeeded by another which consolidates from the atomic debris of the former; and it admits of a multiplicity of world-systems existing contemporaneously.

Such were some of the modifications which Buddhist thought, influenced by the Buddha's insights, produced in the earlier Vedic design, and it is these general principles which distinguish it from all other attempts on the part of pre-scientific man to visualise the kind of world in which he lived. The advance in thought which it represents must be immediately apparent to anyone who compares it with the primitive creation myths of Egypt, Assyria and other ancient centres of world culture. It can justly claim to be the prototype of all models of the universe which have rational principles as their foundation.

With these facts in mind we are better able to approach the next stage of our enquiry, which concerns the nature of the celestial worlds (*deva loka*) and their position in the Buddhist cosmological system.

III

For a better understanding of what follows the reader is recommended to refer to the Chart of the Thirty-one Abodes and its key.

- **Chart: Thirty-one Abodes**

There are three categories of existence in saṃsāra, corresponding to three types of consciousness which are the result of past kamma. The three categories are: the sense-desire sphere, the fine-material sphere and the immaterial (formless) sphere. Each category contains several different classes of beings; in one of them, the Asaññasatta Brahmā Loka of the fine-material sphere (22), consciousness is in a state of suspension and the Brahmās of this class consist only of material form, the reason for this will be seen later.

The world of human beings and animals is physically the same world, and forms part of the sense-desire sphere. Below it, but still in the same category, are the realms of beings in states of deeper misery, while above it are the realms of the sense-desire devas. The boundaries between the human world and those immediately above and below it are not always sharp, and there is the possibility of communication between them. In the case of human beings and animals, although the worlds they inhabit are distinct worlds, there is no physical difference between them; the boundary is purely psychological. This fact gives us the key to the truth that the reality of all the separate spheres of

being lies in the realm of consciousness rather than in that of objectivity.

All the diverse classes of beings have been born in their respective worlds by reason of actions, good or bad, performed in the human sphere of worldly (i.e., sense-desire) activity. When the Karmic result-current of the deeds, which caused their rebirth in these worlds, is exhausted they pass away and are reborn elsewhere. The human world is the realm of moral choice and volitional activity where kamma is generated, so that it is possible for a human being to guide his destiny by his actions. But beings in the realms of misery (1 to 4) are merely the passive sufferers of the evil consequences of bad kamma performed in past lives as human beings; they have no moral sense and therefore no ability to produce good kamma while in their present State. When their bad Karmic result-current is exhausted they die and are reborn according to the nature of residual or "stored up" kamma from previous lives, which has not hitherto had an opportunity of fructifying. If that kamma is good they may be reborn as human beings, or even as devas.

Here it is necessary to note that the statement that beings in the lower worlds are not capable of performing good actions is a broad generalisation; there are exceptions to it. The more intelligent species of animals are often capable of moral action, and although the mental impulse towards it (Kusala-citta) is much weaker than in human beings, still it can be present.

The position of devas in-the sense-desire sphere is also one of limited moral responsibility. For the most part they are passively enjoying the pleasurable results of good karma performed in previous human lives and are not confronted with the necessity for moral choice that devolves upon human beings. Their pleasures are of an aesthetic nature, and the worlds they inhabit are those which have given rise to the belief in a happy after-death state in all religions. Any of the traditional descriptions of heavens, paradises or Isles of the Blest can be applied to them, with one important exception: they are not eternal.

The devas of these realms are beings of varying degrees of intelligence, but as was mentioned earlier they are in some respects at a disadvantage as compared with human beings. Since they are in general unable to produce fresh wholesome kamma themselves, they are compelled to acquire further merit vicariously, by participating in the good activities of human beings. From this fact comes the ”sharing of merits with the devas” which is a feature of Buddhist life. When a Buddhist gives charity or performs some other good deed, he invites the devas to share the merit. Those devas who are aware of the moral law of causality are then able to produce in themselves good mental impulses (*kusala-citta*) by approving the good action, and since intention is the basis of all activity the mental impulse thus produced constitutes good kamma. This practise of sharing merits is also extended to intelligent beings in the realms of suffering, on the same principle.

The devas of the sense-desire sphere are not enlightened personalities, and many of them are more deeply immersed in delusion than are some human beings. Their birth as devas was not in consequence of their having been Buddhists, for any human being, no matter what his faith, may be reborn as a deva. It was the result simply of some good action, quite irrespective of creed. Therefore they carry with them into the deva-life whatever beliefs, true or false, they may have held as human beings, and there is nothing in the conditions of the deva worlds to disillusion them. On the contrary, the immensely long life-span of the devas encourages the belief that they are immortal, and many imagine that they have attained the eternal heaven of the religion they followed as humans. Others believe that they are indeed Gods. Brahmās of the higher spheres are liable to the same delusion, for in the Dīgha Nikāya it is related that Mahā Brahmā imagined himself to be Almighty Brahmā, the Most High, the Invincible One, the Omniscient One, the Ruler, the Lord, the Creator, the Maker, the Perfect One, the Preserver, Controller and Father of all that was and will be. Even when he realised that he was mistaken he continued to maintain the deception before the minor Brahmās of his retinue (abodes 12 - 14). [3] Elsewhere, in the Aggañña Sutta (Dīgha Nikāya 27), the Buddha explains how theistic religion originated as the result of this kind of error. Those devas who are subject to such delusions of grandeur see no need for acquiring fresh merit, and when they ultimately pass away from that state they are reborn in some other

world on the strength of residual kamma, good or bad, in the same way as are the beings below the order of humans.

From this it will be understood that the nature of devas in the sense-desire sphere varies enormously. Although they are devas because of some good kamma of the past, their present nature is not necessarily good. An interesting example of this is the case of Māra, the Tempter, who figured so largely in the life of the Buddha from the time of His Enlightenment until the final passing away.

Māra is the Kāma Deva of Hinduism, the beautiful young god of sensual desire who corresponds to the Greek Eros. Because of his sensual nature and his intense will to prevent other beings from gaining their release from saṃsāra he is known to Buddhism as Māra and Namuci, the personification of suffering and death. The Buddha referred to him always as the Evil One. The connection between the God of Love and the God of Evil is not so difficult to trace as it may seem; even in the Hindu Purāṇas, Kāma Deva appears in this role in the legend of his endeavour to tempt Siva from his asceticism. In some Buddhist texts Māra is the name given to a subdivision of devas belonging to the Yāma realm (abode 8), but more often it stands symbolically for the passions and impurities of the mind. In a characteristic passage (Saṃyutta Nikāya XXIII, 35) the Buddha dismisses the Māras as nothing more than a personification of the personality-groups that bind beings to the wheel of rebirth. In this we may see an illustration of the way in which subjective and objective cease to exist as separate concepts

in the light of absolute knowledge and insight. But the Māra who is an objective being of the sense-desire sphere is himself destined ultimately to become a Silent Buddha.

IV

We have already noted that the existence of other realms of being, normally invisible to us, has been taken for granted from the earliest times on the statements of those who claimed to have made contact with them through what is nowadays called extra-sensory perception. This faculty, or set of faculties, is a subject that is now engaging the serious attention of psychologists, among them Dr. J. B. Rhine who, to quote Prof. Thouless, has ”confirmed the findings of previous students of telepathy that the mind could acquire knowledge without the use of the senses and even make correct reports of events that lay in the future.”

The light that this may shed on the experiences of Swedenborg and others is not yet very clear. What is clear, however, is that we may no longer dismiss those experiences as hallucinations; they bear a relationship to the world of actual events which can be examined and tested by experiment.

The Buddhist view is that it was experiences such as those

of Swedenborg and the mystics, which gave rise to the universal belief in heaven, hell and after-death states in general, and so laid the foundations of the different religions by wrong interpretation. This view assumes the actual existence of worlds other than our own, but to determine what grounds, other than psychical experience, there may be for the assumption requires that we should first of all come to an understanding of what our world really is.

This is far from being a simple task. We know the world to be the outcome of natural processes which are rational and intelligible, and whose laws science has shown itself capable of explaining satisfactorily up to a point. But its complexity is such that there are still many principles unknown to us, besides others recently discovered which are hard to reconcile with principles formerly accepted. One example of this is the way in which Einstein's special theory of relativity has upset the principles of Euclidean geometry, and in doing so has outraged the "common sense" thought-habits of centuries. Einstein's mathematics proved that space in the vicinity of matter was not like the space of Euclid's geometry at all. In effect this means that in such space the angles of a triangle would not add up to two right angles.

The statement that the three angles of every triangle together must equal two right angles is a basic proposition of Euclidean geometry. Almost every other proposition that Euclid proved subsequently depended upon it; but the

initial proposition itself rested on another proposition, which could not be proved. All attempts to prove it on the part of later geometricians were unsuccessful, and although it was not self-evident it had to be treated as an axiom. When it was finally decided that no sound proof was possible, the experiment was tried of constructing a non-Euclidean geometry, in which it was assumed that the sum of the angles of a triangle was less or more than two right angles. The geometry that results from either of these assumptions is not that of the space we know, but it will be a complete geometry and one that is self-consistent. If it is not true of the space we know, it will be true of a possible space. Such a space might exist, and there is no physical reason why it should not.

Now the important point in this lies in the answer to the question of whether the angles of triangles merely do add up to two right angles, or whether they must do so. If the answer had been that they must, the Euclidean geometry would necessarily hold good for all possible kinds of space; but since there are logical and self consistent geometries in which they need not, it becomes evident that our space, and the kind of universe we live in, is not the only possible one.

But besides the non-Euclidean nature of space in the neighbourhood of matter, our world contains many other phenomena, which, because they are undetectable to our senses, have remained unknown up to the present. Sound waves of frequency above 15,000 cycles per second are inaudible to humans, but can be heard by some animals;

large areas of the spectrum are invisible to us, and electromagnetic waves and cosmic radiations are imperceptible without special instruments. Our visible world, in fact, contains within itself another world which would forever have remained unknown and unsuspected had it not been for the development of highly specialised scientific techniques. For countless ages man has lived side by side with this invisible, intangible world without feeling its presence or being conscious of anything lacking in his total picture of the universe. And yet the world be lived in was itself dependent upon this other world with its complementary physical laws.

These extra data do not help us very greatly in our effort to form a mental picture of the world we live in; there are too many seeming contradictions for all of them to be accommodated within the framework of a single logical system of the kind to which we have been accustomed. The only remedy for this situation is to seek a definition of the word ”world“ which shall be free from unnecessary encumbrances, yet exact enough to preserve its meaning in all contexts. We speak of a ”dream world,“ a ”world of the mind“ and a ”world of the senses,“ and in everyday speech we make a distinction between the world of one man and that of another, as when we say that a Chinese farmer lives in a different world from that of a society debutante. These common usages point to a basic psychological meaning of the word: a world is a realm of conscious experience irrespective of whatever reality it may have as its objective

base. It is in this sense that Buddhism speaks of the realm of animals and that of human beings as two distinct worlds. If we take as our point of reference the sensible world of human consciousness we can describe that of animals and other sub-human beings as infra-sensible, and those of devas as supra-sensible worlds.

Taking this standpoint, there is no question of the deva worlds being supernatural; they can exist in a space-time complex different from our own, yet still subject to natural laws of causality, the laws appropriate to the kind of geometrical space in which the devaconsciousness functions. Buddhist relativity takes account of this when it deals with the life-span of the deva worlds, which by human standards is enormous. In the Tāvatiṃsa deva Loka one day and night are said to be equal to a hundred terrestrial years. Since the life span in that particular world is one thousand years it equals thirty-six million years of terrestrial time. In the higher Brahmā worlds one life span covers several cycles of the disintegration and reformation of the universe. These vast chronological stretches may appear fantastic, but we have only to consider the nature of time in relation to the light-years of interstellar space, and to remember that man himself is comparatively a newcomer on the vast stage of geological time, to realise how arbitrary are our conceptions of time as it is measured out for us by the movements of the earth. In certain circumstances our subjective experience of time is something that does not at all agree with the clock; but subjective time is so much

stronger than its objective measurements that we speak of time dragging or speeding by, as though the universe slowed down when we were bored and accelerated when we were happy. And the mind's time in dreams can telescope hours into seconds. The transition of consciousness from one time-scale to another would therefore appear to rest upon an adjustment in the sense of duration. So we find that in the forty-five years between the Buddha's Enlightenment and His passing away, which corresponds to something less than twelve hours in the life of a Tāvatiṃsa deva, beings from the deva and Brahmā worlds came to Him repeatedly for religious teaching. This could be possible only by an adaptation of the deva time-consciousness to the time relations prevailing in our own world. Abhidhamma psychology, which explains the processes of consciousness in terms of a succession of inconceivably rapid thought-moments "geared," as it were, to the vibrational frequencies of matter, [4] offers suggestive lines of speculation as to how such an adjustment could come about.

The whole question of contact between the human and the supra-sensible worlds is connected, though not in a very important sense, with the theory and practise of Buddhist meditation. The connection is not important because the object of meditation in Buddhism is not to obtain extra-sensory faculties such as clairvoyance, clairaudience and the like, but to gain liberation from saṃsāra; but meditation is a means of extending consciousness, and so these latent

faculties are developed in it incidentally. On the other hand, there are yogic and mystical systems which have the cultivation of the psychic faculties as their chief, if not sole aim. It is in these that the "gods" are seen as all-powerful entities, and all kinds of myths come to be attached to them.

> Ah! Happily do we dwell, owning nothing;
> We shall live on joy itself, like the Radiant Gods.
>
> Dhammapada 200.

So far we have discussed the devas of the sense-desire sphere, but it is when we turn to a consideration of the fine-material and Formless spheres that we find the connection between the supra-sensible worlds and meditation practises becoming more intimate. All the beings in these worlds have been born there as the result of some degree of attainment in one-or other of the jhānic practises, or states of trance characterised by mental absorption. Five of these states, corresponding to the five worlds in the fine-material sphere, 23 to 27, are attainable only through meditation leading to insight into the Four Noble Truths of Buddhism. The beings who are reborn as Brahmās in these worlds are those who in their human life have practised the Buddhist meditation up to the attainment of the fourth stage of purification, that of anāgāmi or non-returner. For the anāgāmi who dies before reaching the last stage, arahatship, only one more birth is possible and it takes place in one of these worlds. From there, on the expiration of his life-span, he passes into final Nibbāna. These are the only realms in

the Thirty One Abodes from which it is possible to pass straight into Pari-Nibbāna without being reborn as a human being.

All the other Brahmā worlds, up to the Asañña-satta Brahmā loka, are accessible through meditation practises found in other systems besides Buddhism, but those systems cannot give final release from the Saṃsāric spheres of conditioned existence because they are lacking in the psychological elements which eradicate the grasping and rebirth-producing tendencies; so also they do not give rise to insight-wisdom. When the Buddha attained enlightenment his first thought was to impart the doctrine to his former teachers, the ascetics Ālāra Kālāma and Udaka Rāmaputta; but he found that they had both died, and in consequence of their jhānic practises had been reborn in Brahmā worlds where they were unable to profit by his discovery of the superior method.

Reference has already been made to one peculiar world in the fine-material sphere, the Asañña-satta Brahmā Loka, where existence is only in material form, with consciousness suspended. Rebirth on this plane comes about as the result of a type of meditation directed towards the suppression of consciousness, on the theory that escape from suffering lies in unconsciousness. Ascetics who are successful in this particular form of concentration achieve their objective, but it is not the final goal. When the kammic effect they have produced is exhausted consciousness re-arises in them and they pass away from that state to be reborn into sentient

existence again.

All the Brahmā worlds from 12 to 22 are connected with various levels of attainment in the four jhānas. To those who practise the jhānas they are immediately accessible, for in the trance state the yogin is actually existing in those worlds although his physical body is on earth. When he returns to human world consciousness he retains the memory of his experiences in the Brahmā worlds and this, as we have already noted, is how the various theories of a Creator-God, an immortal soul and an eternal heaven have been propagated. It is probable that the more primitive religions originated from contact with the lower devas, while the higher religions, or the higher forms that evolved from the primitive, owe their inspiration to yogic experiences of the Brahmā worlds. Such experiences are open to anyone, no matter to what creed he may belong, so that the errors of interpretation are as many and various as the individual experiences. One who sees a deva or Brahmā will naturally identify what he sees with whatever God he happens to believe in. To complicate the situation still further, the being he sees may himself imagine, like mahā Brahmā, that he is the supreme deity! This accounts for the similarities, as well as the differences, between the great religions of the world. The cult of a tribal God from the sense-desire sphere who demands burnt offerings may in time have born within its fold a man of superior nature who has cultivated meditation in a previous life. This man through trance experiences becomes aware of the existence of a higher type of being, or

hierarchy of beings, which he takes to be God the Creator and his angels. He then teaches a higher creed, one in which the emphasis is on love rather than on crude power, but still in the name of the tribal god of his ancestors, which is the only god he knows. The nature of the god then appears to have altered, and the yogi-prophet's new teaching may be accepted or not, according to circumstances. What usually happens is that a new religion branches off from the old. So there comes about an organic growth in religious ideas, coupled with a multiplicity of creeds. In several of His discourses the Buddha described the origin of religions in yogic trance experiences of this nature.

It is understandable that primitive man has contact more readily with beings of the infra-sensible worlds and the lower worlds of the sense-desire sphere, so that the cruder forms of religion, animism, shamanism and nature-worship, are the first to appear and continue to survive in very similar forms all over the world. For this reason it is not possible to mark any clear division between primitive religion and demon-worship.

The four worlds of the Immaterial sphere belong to the types of consciousness developed in the Meditation on the Formless. In the highest of them, the realm of neither-Perception-nor-Non-perception, (abode 31) the consciousness is so subtle that it cannot be said to be either perceptive or non-perceptive. The remaining three are connected with the meditations on the Infinity of Space, the Infinity of Consciousness and the Realisation of the Void

respectively; these are known as the *arūpāyatana* jhānas and have as their base an abstract concept unrelated to forms.

The worlds in which consciousness exists without a physical base and without functioning as consciousness the way we understand it, by discrimination and intellection, are the most difficult for us to visualise. Because the human mind is dependent on a physical organ, the brain, we have come to identify it with its material medium. When a particular area of the brain damaged, consciousness is impaired correspondingly; the damage is complete, consciousness is apparently destroyed. And even this is not the whole story; any damage to the neurological system in any part of the body may cause changes in the mental processes, a fact which seems to indicate at the same time that the mind cannot be exclusively identified with the brain, but is associated with the total physical organism. Yet with all this it has not been proved that the material organism is absolutely indispensable to consciousness. Even if we grant that human consciousness cannot subsist apart from its physical base, which is by no means certain, it does not follow of necessity that all forms of consciousness are subject to the same rule. Far from eliminating the possibility of other dimensions of being, governed by laws distinct from those of our own world, science has shown that they are practically possible.

Whether we are willing to accept this in theory or not, two points are deserving of attention in order that we may avoid prejudiced thinking. They are (a) that the science that deals

with our world cannot be expected to prove or disprove the existence of other kinds of universes where different scientific principles may prevail, and (b) that if science denies them, in the face of evidence from other sources, the onus lies on science to prove that they do not exist. Since science can do neither the one nor the other it must be considered neutral until further data are obtained.

At the present stage it is useless to appeal to science except in refutation of some belief which requires supernatural additions to the order of the physical universe. It is only then that science is competent to utter an emphatic No. We may for instance believe, as many responsible scientists now do, that our earth has been visited by inhabitants of other planets, without offending against scientific principles. We may go further, and credit these visitors with possessing faculties far superior to our own, still without passing beyond the limits of scientific tolerance. But if we were to believe that they were capable of miraculously interfering with the order of nature we should be overstepping the bounds of what science considers to be possible. Now that so many of the barriers between the possible and the impossible have crumbled away, this is the only kind of boundary that can still be recognised between a belief that is scientifically possible and one that is super-naturalistic and irrational. And even that may have to be enlarged in the near future to accommodate the results of the latest investigations in para-psychology.

VI

In view of these facts, should we not widen our conception of the universe? Have we not evidence that even the reality immediately surrounding us is much vaster than the limitations of our sense experience would lead us to suppose? And if so, are we not justified in seeking other modes of awareness that will expand the horizons still further?

There is only one way in which we can obtain real knowledge of other planes of being, and that is by the extension of our own consciousness through meditation. The experiences so gained will be purely personal ones, of course, and will not convince anyone else. Nor is it necessary that they should do so, for that kind of "conviction" is not required for an understanding of the truths taught by Buddhism. Those truths stand equally for one world or an infinite multiplicity of worlds. And they are to be tested not by speculation or theorising but by practical application.

Prom the standpoint of the Buddha, the teacher of Gods and Men, all beings revolving in saṃsāra are of the mundane order. They are impermanent, subject to sorrow and devoid of self-essence. From the most insignificant forms of life up to the highest Brahmā worlds there is to be found the primal nescience and the craving that leads to repeated birth, old

age and death. The delusions of divinity are no more important in the reckoning than are the instinctive urges of the animal seeking its food. To all beings with the capacity for understanding the compassion of the Buddha offered one gift—the Doctrine of Deliverance.

Are the worlds of saṃsāra reality, symbol or dream? That is for each of us to find out for himself. Whatever answer we may find in our own minds, beyond it all there is the supreme reality of Nibbāna, transcending the world of both Gods and Men, and all that is conditioned.

> "For, O Bhikkhus, if there were not the Unconditioned, in which there is neither arising nor passing away, there could be no release from the conditioned. But since there is that Unconditioned, there is also the release from the conditioned with its arising and its passing away."

If all the saṃsāric worlds are in the ultimate sense unreal, transient phases of the unenlightened consciousness, it follows that Nibbāna, in which they cease to be, is the sole reality. As it was for the Teacher of Gods and Men, so it can be for us.

Cosmological Thought in Buddhism and Modern Science

At the outset it must be realised that the Buddha did not profess to give any specific instruction regarding the formation of the universe. He laid down, as an essential part of His system of philosophy only such principles as were general and universal because it is these alone which have a bearing on man's own nature, and must be understood in order to bring the mind out of delusion into the state of enlightenment.

At the time of the Buddha's ministry, certain ideas belonging to the schools of Vedic Brahmanism were current regarding the physical world, and, since the Teacher Himself did not categorically deny them, they passed into Buddhist thought with only such modification as was imposed by the central tenets of the philosophy. The view held by the compilers of the Upanishads was that the universe, which is essentially illusory (Māyā), is a projection of the eternal, self-existing Brahman: that is to say, of the *nirguṇa Brahman,* the neuter, or attributeless Brahman, as distinct from the personalised, or *sa-guṇa Brahmā*. It was supposed to come about by the interpenetration of Prakṛti (matter) and Puruṣa (spirit). It was thus the play (*līlā*) of the

divine principle which comprehended all things and permeated them, in a single unity. It is this view which is held today by the school of Advaita, or absolute monism. There is also a school of qualified monism, but since it shares the central concept of divine creation, or projection, what may be said of it in relation to Buddhism is the same as may be said of Advaita.

It was this theory of a primal moving spirit, which Buddhism discarded, substituting for the Brahman the universal law of inter-dependence and causality. If there were a creator, Buddhism argues, he would himself be subject to some law whereby he could perform the act of creation. His being itself requires laws, for to exist is to function, and there must be principles, anterior to and above the functioning, to make the functioning possible. To put it in another way, every action presupposes alternatives, and these alternatives must exist as potentials before the action can be possible. When we say that an action is *possible,* we postulate a law or principle of possibility, and that principle must exist prior to the action. Therefore there cannot be a First Cause in the absolute sense. There must be a prior condition to the existence of anything, including God. This principle was actually acknowledged in the earliest Upanishadic thought under the name of *Ṛta*—the law to which even God is subject. But the Upanishadic schools never pursued this concept of necessity to its logical conclusion. Buddhism does so, and the result is the rejection of a First Cause entirely. The intermediate agent, God as

creator, being found unnecessary, Buddhist thought concerns itself solely with the laws of being, and there is no attempt to present them in anthropomorphic guise.

But Buddhism agrees with Vedantic ideas in accepting the concept of cyclic evolution and devolution of universes. In Hinduism a world period represents a day of Brahmā; it is a period during which a complete cycle of evolution and decline, leading up to the dissolution of the universe, takes place. This is followed by the period of quiescence, or night of Brahmā, between the collapse of one universe and the arising of the next. Leaving out the poetical symbology of the days and nights of Brahmā, the Buddhist Cyclic system follows the same pattern.

The measurement of cosmic time is the "great *kappa*" (Sanskrit: *kalpa*), which may be termed an aeon. Its duration is said to be incalculable: "Imagine a mountain consisting of a solid cube of rock, one league in length, in breadth and in height. If with a piece of cloth one were to rub it once at the end of every hundred years, the time that it would take to wear away such a mountain would not be so long as the duration of a great kappa." The great Kappa, according to Ledi Sayādaw, is not a period so much as a notion of time itself. It corresponds to the idea of an eternity.

The great kappa is itself divided into four subsidiary kappas, each representing a cyclic period of a particular world-system. These periods which may be denoted as aeons, too, are not calculable, and may vary in length. And

while there are four such aeons to an eternity, each of them in turn is subdivided into shorter kappas or ages, of more or less measurable duration. The third type of kappa is that which corresponds to the maximum life-span of any particular being. [5] The fourth and last kappa is the period that intervenes between the destruction of one universe and the formation of another. [6] During this vast period of time —or timelessness, for time exists only in relation to events— the substance of the entire cosmos is reduced to its primal elements and distributed throughout space in an undifferentiated mass. In terms of modern physics we would say that the sub-atomic forces are disintegrated and dispersed. This may come about in two ways: the universe may expand until it reaches the point at which the force of repulsion overcomes that of attraction, and the particles of matter are scattered widely throughout space, or it may shrink until the opposite effect is brought about, and an intense condensation of matter occurs. If, on the other hand, the universe is a “steady-state” system, neither expanding nor shrinking, the breaking up of its constituents might occur through a disturbance of the interior forces of equilibrium. Anyone of these causes could bring about nuclear fission at some stage of the process. All that would then be left of the cosmos would be the released electronic nuclear energy, with which the whole of space, whether expanded, contracted or stable, would be uniformly filled.

In this condition the quiescence would not be altogether complete; so long as a residuum of energy remained, there

would be the potentiality of renewed differentiation of matter and a reconstruction of the universe in accordance with natural law. Like the pendulum which swings to its greatest extremity and after a moment of equipoise swings back, or like a vast pulse beating to an unvarying rhythm, the cosmos repeats its past history. Movement within the distribution of matter begins to increase; clots of matter begin to form, and over immeasurable ages the island-universes begin to take shape once more. The process may commence with a tremendous cosmic explosion, or in the case of a "steady state" system, with a number of minor individual explosions where the concentrations of matter are greatest. In either case the result is the same: the matter forms itself automatically into stellar clusters and nebulae, and in the course of time space again assumes the general aspect with which we are familiar. And life again begins to evolve.

The Cakkavāḷa

Each universe is said to comprise a number of world-systems, or *cakkavāḷas*, and the number of these world-systems contained in the whole cosmos is incalculable. The term universe denotes a particular system, having its own gravitational field and revolving about a centre. Such are

the spiral and cloud nebulae and other groups which constitute the island-universes of outer space. The *cakkavāḷas* are local world-systems embedded in these, as our own solar system is believed to be. According to the evidence available at present, our solar system is situated in one of the arms of a vast galaxy of the flattened disc type, resembling the great spiral nebulax in Andromeda. This galaxy is estimated to contain about 150,000 million stars, and the distance between them increases the further they are removed from the centre of concentration around which they all revolve. Our solar system, which is 30,000 light years away from the galactic centre, makes one full revolution around it in approximately 250 million years. This is known to present-day astronomers as one cosmic year. If we accept that the age of our earth is in the region of 3,500 million years, and that the entire planetary system is as old, the earth is about 15 to 16 cosmic years old. That is to say, our solar system since its inception has made some 15 to 16 revolutions around the centre of the galaxy. [7]

Most of this is scientific conjecture at present, but it is based on reliable data and must be accepted until or unless future discoveries show it to be inaccurate. I quote it here for the bearing it has upon the older cosmological concepts of Buddhism. Agreement between them is found in the common hypothesis of a cyclic breaking-up and restoration of the cosmos in accordance with natural law, and in the rejection of any word for a First Cause or creative agency. In both concepts the act of creation is perpetual, and is the

outcome of natural necessity—it results from the nature of energy and the laws which govern it.

The second important point of contact is the agreement as to a multiplicity of world-systems, the *cakkavāḷas* of Buddhism and the solar systems of present-day astronomy. "In our metagalactic system there are hundreds of millions of galaxies and each galaxy may be composed of hundreds of thousands of millions of stars. Even in our galaxy which numbers approximately 150,000 million stars, there may be hundreds of thousands of planets on which life is likely to originate and develop. Our infinite universe must also contain an infinite number of inhabited planets. [8]

There are in the texts of both Theravada and Mahāyāna Buddhism innumerable references to the multiplicity of worlds that bear sentient life. But it is only in the Commentaries, not in the words ascribed to the Buddha himself, that any detailed description of them is given.

And there, as we should expect, the picture presented has some features in common with other ancient cosmologies: the earth is by implication flat, with a great mountain, Meru, at its centre. There are seven great oceans encompassed by seven rings of mountains, and four great continents are situated respectively at the four cardinal points of the compass. The southern continent is Jambudīpa, the Land of the Rose Apple, or India. Between the four great land masses there are smaller islands. The sun, moon and planets were supposed to revolve around Mt. Meru, night occurring

on Jambudīpa when the mountain obscured the sun, and it was day on the Northern continent, Uttarakuru.

There are two points to be noticed in connection with this peculiar view of the earth. The first is that, if it were indeed the picture currently accepted at the time of the Buddha—and some very ancient texts from the Tipiṭaka tend to show that it was—it would not have been to the purpose of the Buddha, who was a teacher of spiritual truths, to correct it. Had he attempted to do so, his time and efforts would have been wasted. Few would have understood, and the understanding would not have benefited them spiritually. The majority would have dismissed it as the theory of a lunatic. Furthermore, Pali is an undeveloped language, in which a vocabulary of relatively few words had to be made to express all ideas. Lacking the necessary terminology, which modern languages have developed and expanded as the growth of thought required, the Buddha would have been handicapped by these limitations of language, even had he wished, to describe the motions of the planets and the physical construction of the solar system. In Pali a word, the primitive meaning of which is very simple, is made to serve for highly complicated ideas, owing to the absence of any borrowings from other sources, or the evolution of new verbal forms. Thus the word *khandha,* which philosophically stands for an aggregate of physical and psychological factors, means in its original sense merely a "lump" of something. It is even used physiologically to denote "shoulder." With such a restricted vocabulary ideas tend to

remain rudimentary, or to be misunderstood. We therefore have no means of knowing whether the terms employed to describe a world-system are to be taken literally or as makeshift approximations, analogies or poetic fictions.

However that may be, it is a striking fact that the true picture of the solar system as we now have it, is actually in closer conformity with the Buddha's teaching of universal principles that is the traditional one held by the Buddhist commentators. It carries out the principle of uninterrupted revolution denoted by the wheel (*cakka*) and that of having no point of commencement, of which the physical symbol is the sphere. If, in fact, we would seek for a material illustration of the law of recurrence, of cyclic progression under the domination of incessant change, we should find its perfect expression in the revolving island-universes, the solar systems and the structure of the atom.

In the Saṃyutta Nikāya (II 178), the Buddha speaks of the succession of *kappas* in the following words:
"Undetermined, Bhikkhus, is the beginning of this world. The past extremity (*pubba-koṭi*) of beings running on in birth after birth bound by ignorance and the bonds of craving is not manifest."

The Pali word translated here by "undetermined" *anamata* (*a-mata*), meaning that which is unknown and unascertained. The sense, therefore, is that the past extremity or ultimate beginning of the cycles is not to be known by calculation. There is no limit by which it can be

defined. “The past extremity … is not manifest” is equivalent to saying that it does not exist. A similar use of the phrase is found in the collection of texts, the Saṃyutta Nikāya (II, 52), here the Buddha asks: “If, Ānanda, there be no birth, can old age and death be manifested?” To which Ānanda replies: “Truly, they cannot, Lord.” From this is clear that “to be manifest” means to exist, and “not manifest” means not to exist.

The proposition contained in the words “The past extremity? is not manifest” can therefore only mean that, although each kappa has its beginning, middle and end, there is no beginning to the succession of great kappas in general. [9] The cyclic successions have existed always, the reason being that they do not exist *in time,* but time, as a progression of events, exists *in them.* The time of Bergson, which is absolute duration, not susceptible of measurement other than that which is brought about by cutting into the flow of specific events in these more or less arbitrary divisions that we commonly mean when we speak of time. A beginning of time in the state of timelessness is clearly an impossibility it is only *periods* of time that can have a beginning an end. We shall have occasion to deal further with the philosophical difference between time as a symbol of space and time which is absolute duration when we discuss the nature of the flux of becoming, later on. [10]

Stages of the Great Cycles

In the Aṅguttara Nikāya (Vol. II, p. 142; *The Fours,* No. 156), the Buddha says:

> There are four incalculable epochs, Bhikkhus. The four are: the enveloping epoch; the enveloped epoch; the developing epoch; the developed epoch. The epoch, Bhikkhus, during which there is cosmic envelopment is not easy to reckon as so many years or centuries, or tens or hundreds of centuries.

The enveloping epoch is the period during which the world-system is in decline, the enveloped epoch is that in which it is in the state of dissolution. The developing epoch is the period of growth when life evolves from lower to higher stages; the developed epoch is that in which evolution has reached its highest peak. Having once been reinstated, while the world-system continues to be in that state it is said to be developed. [11] Each of these periods is a fourth part of a great kappa, so it will be seen that every great kappa involves the full development of sentient life followed by its total disappearance from a world-system.

It is perhaps of rueful interest to note that the ancient Buddhist ideas regarding the destruction of worlds tally in important respects with those held by other religious and philosophical systems. Three types of destruction are

postulated: by thermo-dynamic action, by liquidation and by atmospheric disturbance. These causes correspond to three of the great primaries of which matter is (in philosophical terms) composed. Earth or solidity alone is excluded as a possible agent of destruction.

The idea is that from time to time there is a disturbance of balance between the primary constituents, and when one or other of them increases to such an extent that it passes the critical point, it gains ascendancy over the others. There are at present in the cosmos planets and stellar systems in a state of combustion, others in liquidation and others in a condition of atmospheric disturbance. All suns are fiery masses, whilst some planets are in the molten stage, others have their surface covered by liquid, and some are enveloped in dense atmospheres of gases noxious to organic life. As one example of the latter we may take the planet Jupiter in our own system. This member of the solar family is known to be surrounded by dense clouds of ammonia and methane in a state of violent perturbation, with possibly a layer of ice or nothing more than a thick slushy layer, perhaps of ammonia particles, surrounding a rocky core. Saturn also has a stormy and unwholesome atmosphere composed of ammonia, methane and hydrogen. [12] They, like so many other bodies unknown to us, are not at present able to sustain highly organised life, but whether they will be able to do so at any future time must depend upon either a radical change in their condition or else a wider range of adaptability in living organisms than we are at present able

to conceive. Despite its carbon dioxide and possible formaldehyde clouds, Venus alone in our family of planets seems to offer possibilities of being the cradle of future life. But at present, if the theories of Menzel and Whipper are correct, its actual surface is covered completely by a liquid mantle, a large, continuous ocean. [13]

I have described the ancient belief that worlds may end by combustion as a rueful one because of the possibility that man might eventually bring it about himself, a possibility which at the time of writing seems to be in the increase. There is, in any case, a clear connection in Buddhist thought between the total kamma of beings taking birth in a given world-system and the fate of that system considered as a physical entity. While universes, like all other phenomena, are subject to the law of dissolution and must after the lapse of ages pass away, the manner of their destruction is in a certain sense determined by the accumulated kamma of the beings inhabiting them. Perhaps there is a mythological shadowing forth of this truth in the almost worldwide tradition of a great deluge which brought a former epoch to an end. [14] In a universe subject to almost entirely to mechanical laws of growth and decay it is man who is the sole willing and independently acting agent, and as such he plays a unique and decisive role in the process of cause and effect. His actions are capable of disturbing the harmony of nature to a degree that can be catastrophic. This idea is found not only in Buddhism but in the Taoist conception of man's relation to the cosmos, where in fact it occupies a

central place. It can be a contributing factor in the destruction of a world-system, either directly or indirectly; but whether it is or not, an end must come in accordance with natural law. On the other hand, the re-formation of the universe after a period of quiescence is brought about by unexpended residual kamma of the beings who formerly lived in it. Thus we find it stated in the Dīgha Nikāya:

> "Now there comes a time, brethren, when, sooner or later, after the lapse of a long, long period, this world-system passes away. And when this happens beings have mostly been reborn in the World of Radiance, and there they dwell made of mind, feeding on joy, radiating light from themselves, traversing the air, continuing in glory, and thus they remain for a long period of time.
>
> "Now there comes also a time, brethren, when, sooner or later, this world-system begins to re-evolve. When this happens the Palace of Brahmā appears, but it is empty. And some being or other, either because his span of years has passed or his merit is exhausted, falls from that World of Radiance, and comes to life in the Palace of Brahmā. And there also he lives made of mind, feeding on joy, radiating light from himself traversing the air, continuing in glory; and thus does he remain for a long period of time."
>
> (Brahmajāla Sutta, tr. by T. W. Rhys Davids)

Every world-system in its complete state comprises thirty planes of existence in addition to that occupied by human life. These planes are spoken of in the popular cosmology of Buddhism as being ranged one above another, with Mt. Meru ascending in their midst, but as we have seen, they have no definite spatial location in reality, but interpenetrate one another on different vibrational frequencies. Nevertheless, it is necessary to map them in ascending order, to make their relationship to one another explicit, just as they are found in the Buddhist treatises on the subject. When this is done, the result is a chart of saṃsāra, showing all the states comprising what it known as the Three Worlds (*tiloka*), namely the realm of sense-Desire (*kāma-loka*), the fine-material realm (*rūpa-loka*) and the non-material realm (or world of Formlessness; *arūpa-loka*). (See the Chart on p. 14). Of these thirty-one abodes, those that constitute the sphere of sense-desire (*kāma-loka*) are the numbers 1–11 in our chart, including the inferior states, the human world and the lower heavenly planes. Above these the numbers 12—27 are worlds of fine substance, but still having form (*rūpa*) and differentiation. In all of these worlds, the beings are equipped with both mind and body, with the sole exception of No. 22 where the Brahmās have form only. The reason for this peculiar sphere will be given later. The chart numbers 28 to 31 constitute the non-materials, or formless, worlds inhabited by a highly-developed class of beings that exist solely on the psychical level, as zones of mental energy:

The fine-material realm includes a group of five worlds (the Pure Abodes or Suddhāvāsa; Chart 23—27) which are accessible after death only to those who, before their death, have attained the third of the four stages of Holiness, i.e. that of an anāgāmi, or non-returner. On the expiration of the life-span in that sphere, the anāgāmi passes straight into Parinibbāna, having attained to the state of sainthood in these Pure Abodes, which belong to the Brahmā-worlds. They are worlds of form because it is not possible to attain enlightenment without the realisation of impermanence, suffering and not-self in the physical as well as the mental constituents of personality.

The spheres above them (abodes 29 to 31) are the four non-material, or formless worlds which correspond to the four formless jhānas. They are the planes on which are reborn those who have obtained the mental absorption of the infinity of space, infinity of consciousness, of no-thingness and of neither-perception-nor-non-perception, but who have not transcended them by ultimate realisation and the complete destruction of the elements of attachments. These Brahmās at the end of their life-span are reborn in one of the lower planes.

It is these states that were conceived as being the ultimate goal by the Vedic teachers prior to the Buddha, and are so still by modern Hinduism. They represent the "union with Brahmā" which was attained by Siddhattha Gotama's first teachers, Ālāra Kālāma and Uddaka Rāmaputta.

The sphere of the sensationless beings (*asaññasatta brahmaloka*) whose nature consists only of material form without any accompanying mental aggregates (*nāmakkhandha*), is where ascetics are reborn who on earth have attained in their meditations the temporary subsidence of mental activity, under the mistaken belief that suffering is solely a characteristic of the mental life. After exhaustion of the kamma causing that form of existing, they are reborn again in a lower sphere where both material form and mind exist.

Between some of these worlds of beings and others there is no great physical separation, and in some instances they occupy the same dimensional space, as in the case of the human and animal worlds. Others interpenetrate one another so closely, although their vibrational frequencies are different, that by an adjustment of their mental frequencies beings belonging to one plane are able to manifest on others. It is for this reason that the phenomena of spiritualism are so often confused and baffling. The entities that are contacted during spiritualist séances often belong to worlds lower than the human, more particularly the world of Petas, or unhappy spirits, who by excessive attachment are "earthbound," until such time as their unwholesome kamma is expended.

When it happens that psychic manifestations from the higher planes appear, it can only be from those worlds that are but very slightly above the human, that is to say, the lower planes of the deva-loka. It is from these

comparatively happy realms of existence that spiritualists derive the comfort that the psychic evidence for survival affords them; but the entities reborn on this level have no greater knowledge concerning the ultimate truths of existence than we have ourselves. Often, indeed, their knowledge is less: The only fact of which they are certain is that they are living in pleasant surroundings and that their happiness is increased by their ability to communicate with the human world. For the most part they seem to be unaware that they must eventually pass away from their present condition to be reborn elsewhere. In psychic communications there is, however, the recurring theme of transitoriness: the entities are said to pass on to higher realms after a period of supposed preparation. In reality they are frequently reborn as human beings or in some still lower world. From other communications received by psychic mediums it is evident that the state between one human birth and another is not always the "Summerland" which spiritualism, for the consolation of the bereaved, emphasises so strongly.

Communication with the higher realms of being in the fine-material plane is possible only to those who have strenuously cultivated the meditation practises, the "seers" or adepts of developed psychic power. In the ease of the formless worlds a specially high attainment is necessary. Only those who have cultivated the four jhānas associated with the sphere of infinite space, infinite consciousness, no-thingness and neither-perception-nor non-perception (an

indescribably subtle and refined state of consciousness) can make contact with the beings of those realms. To Hinduism this is known as "Union with Brahmā", and is believed to be the ultimate attainment. The Buddha who was a Knower of Brahmā in the sense that he had himself made contact with the Brahmā-world, attributes to this faculty on the part of other sages, who had not gone beyond the realm of form, the belief in a Creator-god. The reference to this is to be found in the Brahmajāla and Aggañña Suttas of the Dīgha Nikāya. **[15]**

It is written that at the destruction of a world-system, either by fire, water or wind, the realms of existence are demolished from the lowest plane up to the highest Brahmā-world.

At the end of the cycle, the beings from the lower worlds, by attaining the jhānic states, become reborn among the Radiant Gods of the Brahmā-world. From there, after the lapse of the Enveloped Period, they again descend to be reborn in the human world, which has by then been reconstructed by the cyclic process of natural law and has become sufficiently evolved to manifest the higher forms of life once more. The faint memories they then carry with them of their former state of being form the foundation of all the primitive cults of survival and are the starting-point of man's religious instinct.

> "Not in entire forgetfulness,
> And not in utter nakedness,

But trailing clouds of glory do we come
From God who is our home “,

as Wordsworth wrote in one of those inspirational gashes which relate poetry to the race-memories of mankind.

Evolution

When, in the course of a developing epoch a world reaches the stage at which life becomes possible, inorganic matter, by a natural process which biochemists may now be on the point of being able to duplicate, becomes transformed into cellular structure which exhibits the characteristics of life; that is growth and the assimilation of nutriment from its surroundings.

Since doubt began to be felt about the theory of the supernatural creation of life on our planet, scientists have been seeking other explanations of its origin: According to a report of C. Meunier, Louis Pasteur had conducted a series of experiments to ascertain whether viable bacteria or their spores existed in carbonaceous meteorites, the object being to discover whether the germs of life had reached the earth in debris of a shattered planet of our system. His results were negative and remained unpublished; but even had the panspermic theory, as it is called, proved to be correct it

would still not have solved the problem of the ultimate beginning of life, but only shifted it a stage further back. At the time of writing it is generally believed by those who are studying this question that wherever life may have arisen in the universe it has done so independently.

The latest researches have revealed certain steps in the process of evolving living organisms which seems to give an outline of the necessary conditions and stages for life to appear. It has been known for a long time that some very rudimentary organisms, such as viruses, occupy a borderline position between the organic and inorganic, and these may well be the pattern of life in its initial stages. It now seems probable [16] that at some point of the earth's development a process of direct hydration of hydrocarbons occurred as the result of their combining with whole molecules of water. The organic compounds then by interaction with ammonia yielded nitrous derivatives of hydrocarbons together with derivatives of oxygen. The data furnished by organic chemistry show that low molecular hydrocarbons and their oxygen and nitrous derivatives when in a humid atmosphere or an aqueous solution go through a far-reaching polymerization and condensation, which eventually leads to the formation of very complex substances, very closely resembling those that are found in the composition of living organisms. In the earth's primary hydrosphere many types of sugars and other carbohydrates could have been formed, and recent experiments have shown that such complex and at the same time widespread

substances in organisms as porphyrines, nucleotides, and others can be synthesised from the simplest carbon and nitrogen compounds.

The next stage, that of the formation of the protein molecule, depends only upon the formation of amino acids, which are its basis. This has been illustrated by the experiments of S. Miller, who after passing electrical sparks through a mixture of methane, hydrogen, ammonia and water vapours was able to detect by the method of paper chromatography the presence of glycine, alanine and other amino acids in the solution. From these and other experiments which have shown how amino acids may be polymerized into chains of amino acid particles to form the basis of the protein molecule, a general plan of the process whereby the primary synthesis of proteins and other complex organic compounds could have taken place on the liquid surface of our planet is now made clear.

The problem, however, does not end there. To become living cells the protein bodies have to acquire the property of continually regenerating themselves from the substances that form their external environment. This process of self-regeneration and self-reproduction is not found anywhere in the inorganic world. It is metabolism which is the distinguishing characteristic of life. This involves a highly complicated series of co-ordinated activities in the organisation of living bodies. Hundreds of thousands of chemical reactions must take place in a living body, and these not only combine harmoniously in a single sequence,

but the entire order of events must be regulated to condition the self-preservation and reproduction of the vital systems, in conformity with the conditions of the external environment. Therefore the origin of life is essentially the origin of metabolism, the processes of assimilation and dissimilation of nutriment and this, apparently, to a specific end. The stage at which it arose in the simplest living organisms represented the vital point of transition from inert substance to living cell structure.

Buddhism gives four modes by which living organisms come into existence, corresponding to four genetic types of beings, the oviparous (born of eggs), the viviparous (born alive), the moisture-generated and the abiogenic, or spontaneously arisen beings. It is said that in the Developing Epoch beings were first born abiogenically, through the action of their past kamma operating on matter. Later on, this spontaneous arising of life gave place to sexual transmission of the seed, and beings became either oviparous or viviparous. Some commentators include fish and worms among the moisture-born, but there is no canonical authority for this; it was their own interpretation in the light of a belief which persisted even in England until the 18th century. [17]

In the Aggañña Sutta (Dīgha Nikāya) we are told that there was a period in the early history of the earth when great downpours of water covered its surface. It was in this liquid world that the spontaneously-arisen beings first appeared. They then lived subsisting on the nutriment they extracted

from the surface of the water. It is not difficult to see in this, when allowance is made for the nature of the Pali language and the ideas it was capable of expressing, a very close approximation to what science now supposes to have occurred: When solutions containing individual protein substances such as those we have been discussing are mixed together, the protein molecules which at first were evenly distributed throughout the solvent begin to unite in molecular piles. When one of these piles reaches a critical point in size, containing perhaps several millions of molecules, it separates into drops, which are called coacervates.

All the proteins that were diffused in the solution now concentrate in these drops, while the surrounding liquid becomes deprived of any. Now these protein coacervate drops, despite their liquid consistence, evidently possess some kind of internal, very elementary organisation. They have a marked ability to absorb different substances from the solution around them. The assimilated substances then begin to interact chemically with the substance of the drops themselves, chiefly with the proteins. In this way observation has shown that rudimentary processes of disintegration and synthesis of various substances are likely to take place in the drops. If by reason of their individual composition and structure, synthesis takes place more rapidly than disintegration under the given conditions of environment, the drops become dynamically stable formations so long as the given conditions exist, and they

may not only persist for an indefinite time but can increase in bulk. They thus exhibit the two primary characteristics of life, assimilation and growth, although they have not yet attained the status of living organisms in the technical sense.

Just as in the laboratory tests which have demonstrated these facts, there must have been a time when the proteins or protein-like substances which originated in the water of the earth's primary hydrosphere, had to form these complex coacervates. This in turn had to lead to the origination of a "natural selection" of these individual systems. The present theory as to how this came about rests on the assumption that the primordial waters were a solution of various organic substances and inorganic salts. These materials were absorbed by the coacervate drops and entered into chemical reaction with the substances of the drops, giving rise to the processes of synthesis and disintegration. The efficiency of these parallel processes was determined by the internal organisation, of each individual drop. Consequently it was the drops which in the given circumstances of environment were endowed with a certain dynamic stability, on account of which the processes of assimilation and growth were faster than those of disintegration, which were able to exist for any length of time. Those which were not so suitably organised failed to survive for long, and contributed nothing to the future evolution of organic matter. They vanished from the scene, while the drops which had the most perfectly adjusted organisation, their power to absorb fresh elements being in excess of the process of

decomposition, continued to grow. They would increase in size until they reached a critical point once more, and then they would divide, forming smaller drops which each went its way, inheriting the basic dynamic stability which had characterised the original drops.

Such appears in outline the manner whereby nonliving matter became changed into rudimentary forms of life. It led ultimately to the origin of protein bodies with a fully organised metabolic system, the first truly living beings to appear on this planet.

Now this is all very well, but does the mechanistic view explain everything, when it has explained how life could originate abiogenically? Even when we grant that in the remote epoch we are discussing, there probably was an increase in the amount of organised substance and in the number of coacervate drops in the hydrosphere, and that the organisation of these drops was constantly changing to meet alterations in the environment, with those changes subject always to the rigid control to natural selection, it still seems very doubtful whether life would have evolved beyond the stage of the most perfect adaptability for survival, if there had not been some other factor besides natural selection at work. Man has gone a long way beyond the point at which he became best fitted to survive; his directional trend now is, if anything, towards the acquirement of faculties more likely to lead to self-destruction than to further progress. And it would not be by any means the first time that natural selection had led a

species to destruction. Using the case of mankind to illustrate the point it may be arguable that it is when natural selection has reached the stage of perfect adaptability to environment that its effect is to work in reverse, precisely because it is a mechanical, not a purposeful, process. But notwithstanding the powerful arguments in support of this view the fact that in the course of evolution nature produced beings which are not satisfied merely with coming to terms with their environment, but desire satisfactions that have nothing to do with survival—often, in fact, militating against it—introduces a disturbing element into the picture. To ignore it would be to deny the existence of factors in human life that are at least as important as those of growth and procreation. What need of evolution is served, it might be asked, by those qualities which most distinguish man from the lower forms of life? Such qualities as, for example, self-sacrifice, idealism, concern for the welfare of others? Even among certain animals these characteristics, or something approaching them, are not entirely lacking; yet neither in man nor beast do they conform to the pattern of an activity governed only by natural selection. From that point of view they appear as nothing but aberrant forms of behaviour.

More than that in a world of mechanistic principles no cause can be assigned to them that would explain them away as sports of behaviour parallel to the sports of genetics. And a phenomenon without a cause is a fatal flaw in the system. If these are merely a superior form of conditional reflexes on

the higher evolutionary rungs we are still under the obligation to discover by what they are conditioned and why these particular conditionings became effective in some individuals but not in others. So far as I am aware, there is no theory which plausibly accounts for them on the lines of evolutionary necessity.

Returning to the Buddhist view of evolution, we find it to be inseparable from the concept of moral order. But the moral order, instead of being imposed from without, as part of a preconceived plan, is something which is inherent in the law of causality. The evolutionary ascent is preceded by a descent of beings whose deterioration led them to birth in grosser material forms. Thus, before the advent of the first unicellular micro-organisms it is said in the Aggañña Sutta that beings from the Brahmā-worlds came to spontaneous birth in planes adjacent to the terrestrial sphere, where they remained for a long time.

(Here the Author's manuscript ends)

Expanding Universe and Steady-States Universe

The universe visualised by de Sitter is a pulsating system. In this view the entire universe comprising all the galactic systems scattered throughout space, expands during a period of many million years, and, having reached its extreme limit of expansion begins to contract at the same rate. The reason for this, as explained by Eddington, is that two principles operate throughout the universe: the accepted Newtonian attraction between the Milky Way systems, and a principle of cosmological repulsion. The density of matter in the de Sitter universe is extremely low, so that the force of Newtonian attraction may be considered negligible. This being so, the cosmological repulsion operates without hindrance, and the universe expands. If more matter is somehow introduced into the system, the reciprocal gravitational attraction tends to hold the mass together, and counteracts the expansion. As the amount of matter is increased, so the rate of expansion is retarded. If such a process takes place it can reach a point at which the Newtonian attraction between the galaxies is just strong enough to equal the cosmological repulsion, with the result that there is no expansion. This is the world as conceived by Einstein, a balanced system. If still more material is added to the mass, the attraction becomes stronger than the

repulsion and the result is a contracting universe. Eddington puts forward a further theory, to the effect that "at one time the system expanded itself to much greater size than it is now, that then it shrank and now again expands. Accordingly it was possible that great velocities were produced by a force directed inwards, whilst the inward velocities were converted to outward velocities and in that way the system was forced to. swing through a state of equilibrium." (Quoted by D. Anton Kropatsch (Vienna) in *The Maha Bodhi*, Vol. 70, No. 5, 1962)

Tolman is one of those who favour the hypothesis of successive cycles of expansion and contraction of the universe. This state of things, in his view, is due to variations in the material masses in the universe. But it so happens that we are at present aware only of the passing away of matter, and Tolman's hypothesis seems to require at some stage a creation of fresh matter. It is possible, however, that the radiation dissipated in space somehow transforms itself again into material particles—that is, into electrons, atoms and molecules—and so matter is "reborn." Not the same matter, but a force-result (energy-resultant) of matter that has existed previously. These particles would then gather automatically into larger masses, which again through the effect of their own gravitation would become agglomerated into nebulae, suns and finally galactic systems, and in this way the cycles of the universe could go on repeating themselves endlessly. This view receives substantial support from Einstein's theory of the

equilibrium of mass and energy, and in fact experiments have already shown that the photons of the higher radiation energy, such as gamma-rays, can under certain conditions be transformed into pairs of electrons and positrons. It may be that the law of entropy which we see in operation, whereby the final death of the world seems inevitable, is only a section of a much more comprehensive process—the process, in effect, of the death and rebirth of the universe. This view affords a striking correspondence to the doctrine

Of the death and rebirth of sentient beings as it is understood in Buddhism, for in this model of the universe there is no abiding substance, but only the actual process, as it appears through the cyclic transformations of energy, of recurring situations.

Bertrand Russell in *The Scientific Outlook* joins issue with Eddington and Jeans for professing to see in these theories ground for assuming the operation of a creative principle, and calling it God. In this conflict of scientific minds Buddhism takes a middle and unique course. It finds no reason for presuming an active and intelligent principle behind the process, but maintains that there is an impersonal law which in its manifestations appears to be intelligent because it is intelligible. Because we ourselves are formed in accordance with the laws of causality, and can become capable of understanding them, it must appear to us at a certain stage that there is a mind similar to our own at work in the processes of nature. Because we find much to approve in the orderly working of the universe, and much

that appears to have been designed, we are ready to overlook the many ways in which, from the humanistic point of view, it could have been constructed better. And - we overlook also the fact that our sense of its design derives from the fact that we ourselves are part of that design, and cannot see it in any other way than that in which it reflects our own nature. In the same way it appears to us that flowers must have been made beautiful for our satisfaction, whereas the truth is that we see flowers as beautiful only because we ourselves are conditioned to see them in that way. The flower's beauty is part of its functional design; if circumstances had forced it to be different in every way, our sense of the beauty of flowers would be different also. Our aesthetic values are conditioned by the forms of nature, not the other way round. Similarly, when we see beauty in the mathematical laws of the cosmos, it is not because they emanate from a mind similar to our own, but because our minds are formed in accordance with the mathematics of our world.

The Magic Mountain [18]

Man has always thought of his gods as dwelling on the heights. “Lift up thine eyes unto the hills, whence cometh thine aid,” sang the Old Testament psalmist; and in ancient times the holy places, the fanes and altars of sacrifice where the priests went to make their offerings and take counsel with the tribal deities were nearly always on some lofty eminence. In Buddhist countries, too, the stupa or pagoda is given a commanding situation, from whence it dominates the surrounding countryside and can be seen many miles away, the first object to be lit by the rays of dawn and the last to reflect the gold of the setting sun.

It is in the high places that the gods have their abode. Towering, inaccessible peaks seem always to have exercised an awesome fascination over the minds of men. It is little wonder, then, that the holy mountain has been an archetypal feature of mythology from the earliest times: it expresses man’s wonder and fear in the presence of unknown powers veiled in cloud and swirling snow-invisible powers that presided over the storm, hurling the shattering thunderbolt down into the trembling valley, or else calmly, silently contemplating the puny affairs of mankind from century to century in a timeless, brooding eternity.

The cosmography of ancient India had its sacred mountain,

Meru, sometimes called Sineru, Sumeru, Hemameru or Mahāmeru. It was thought to be situated in the exact centre of the Cakkavāḷa, or world-system, and so north of the southern continent, Jambudīpa. The fact that Meru was located in the north of the system suggests an identification with the Himalayas, and the name Hemameru gives support to this possibility. There can be little doubt that in early times the idea that an immense peak lay beyond the tall, mysterious boundaries of the Himalayan range, which cut off the horizon from the plain-dwellers below, took hold of the imagination, and it was in those high, remote solitudes that the gods of the storm and blizzard—the first nature gods—were believed to have their home. A memory of it may have been preserved by the branch of the Aryan race which travelled westward, giving rise to the Olympus of the Greeks, the abode of Zeus, wielder of the thunderbolt, and all his divine hierarchy. For Hindus, Mount Kailasa, a real Himalayan peak, has been a holy place revered for centuries as the seat of Siva and his consort Parvati. Even today it is the resort of *sanyasis* following the tradition of the *rishis* of old who were said to practise their austerities on the lower slopes of Mount Meru. It was with the rise of the Saivite cult that Kailasa gradually came to take a more important place in legend than the Mount Meru of Vedic times. With the advent of Tantra later on, Meru was taken into the yogic systems as a symbol of the spinal column, and an elaborate connection was built up between it and the various *chakras* to exemplify the principle of macrocosm and

microcosm. The mystic formula of "As above, so below," familiar to Western occultism through the Kabbala was equally well known to the Tāntrikas, who saw the human body as the universe in miniature and made Meru its vital core. The principle is seen to be really logical when we consider that the atom is a universe on the microcosmic level.

The Buddha was not concerned with teaching geography, and the early Buddhists did nothing to change the ideas prevalent in Vedic India with regard to the conformation of the earth. The existence of Mount Meru was taken literally and a precise description of it was given together with other details of *cakkavāḷa.* According to this cosmology there is an infinite number of *cakkavāḷas,* and each is a closed system having the general features of all the rest. Each *cakkavāḷa* has a Mount Meru as its centre, surrounded by four great continents. With the scrupulous attention to statistics which distinguished the early Buddhists, exact dimensions are given. Mount Meru has its base 84,000 *yojanas* below sea-level and rises above it to the same height—again the principle of "As above, so below." On its summit is situated the Tavatimsa deva-loka, the heaven of the Thirty-three (Gods) under the rulership of Sakka, the Buddhist equivalent of Indra. This is the lowest one of the Kāma-loka heavens. At the base of the mountain lies the Asurabhāvanā, home of the Asuras or Titans, who are perpetually at war with the gods. The Asuras are the "Fallen Angels" of Indian mythology. Just as Yahweh in Judaic tradition is supposed

to have cast the archangel Lucifer and his rebellious cohorts out of heaven, after which they became powers of evil, so Indra is said to have thrown the Asuras down from Tāvatiṃsa when they tried to usurp his authority. The two myths are so similar that it is difficult to believe that they had not a common origin or that one was not derived from the other, particularly in view of the fact that both have a parallel in the Greek myth of Zeus casting Prometheus, leader of the Titans, out of heaven for an offence of the same kind. This would seem to be another of the archetypal myths that have been preserved from prehistoric times. It may have originated in an attempt to explain what man, having a confused recollection of former happiness in a higher state of being, a deva or Brahmā-loka, felt forced to regard as his present fallen state, of which the Genesis legend of the Fall offers another example. On the other hand, the widespread legends of a war in heaven may have had their origin, in an actual physical event, a cosmic disturbance such as that described by Immanuel Velikovsky in "Worlds in Collision."

To complete the geographical description of the earth as it appeared to Vedic Brahmanism and early Buddhism, Meru is surrounded by seven circular and concentric mountain ranges, between which lie the great oceans. Four great. islands (*mahādīpa*) of continental size lie at the four cardinal points and midway between the base and summit of Mount Meru and scattered between them are two thousand smaller islands. The outermost ring of mountains is the boundary of

the *cakkavāḷa* and the entire system is said to be supported by water (*āpo*) and ultimately by air (vayo). Later Hindu myths introduced the idea that the earth was upheld by either a tortoise or an elephant, but it seems clear that before the time of the Purāṇas it was not considered necessary that the earth should have any substantial support. The Purāṇas represent a decline of thought into pseudo-realism; they tried to give an account of the situation based upon common observation.

Precise measurements are given for all details of the world-system: the areas of the continents, the extent of the oceans and the respective heights of the encircling mountains are all set down with assurance. The *cakkavāḷa* itself is represented as being flat and constructed on the principle of a layer-cake, with successive strata of soil, rock, iron etc., one above the other. On the underside is a layer of the nutritive essence (*oja*) which was the first food of material beings when the universe was reconstructed at the beginning of the world-cycle. **[19]**

Each *cakkavāḷa* is a complete and self-contained unit, furnished with its own heavens and subhuman spheres of existence. It has its own devas and Brahmās, and they even bear the same names as those of our own world, the names being not so much personal appellatives as the titles belonging to offices and functions. It follows therefore that each world-system also has its own Buddhas. More is made of this point in the Mahāyāna Sutras than in Theravada. References to the infinity of worlds and of Buddhas are very

frequent in the literature of Sanskrit Buddhism, and by the same token it contains more allusions to Mount Meru than are to be found in the Pāli Tipiṭaka. The composers of the Mahāyāna Sutras, some five or six centuries after the Parinibbāna of the Buddha, delighted in aggrandising their descriptions by the introduction of innumerable world-systems.

From the isolated condition of each distinct world-system it would seem that beings do not transmigrate from one to another in the course of rebirth. I have not found any text to support the idea that transmigration occurs between one *cakkavāḷa* and another. When a world-system is destroyed by natural forces at the end of an aeon (*kappa*), all that remains of it is the formless Brahmaloka, and it is there that all beings are obliged to be reborn until a new cycle of the development of the universe (*saṃvatti*) takes place. [20] It appears that beings revolving in saṃsāra are inseparably connected with one particular *cakkavāḷa*, the history of which is like that of an individual being: that is to say, it is the history of a causal continuum, not of an abiding entity. Just as the individual dies, leaving nothing behind but the potential of his kamma, which in the sequence of cause and effect produces another psycho-physical organism to carry on his identical world-line of conditioned phenomena, so a universe also comes to an end, but in due course another one comes into existence in the same line of cause and effect, through the kamma of the totality of beings belonging to it. Thus every being is in some sense identified with his world-

system, and his world-system with him, until such time as he puts an end to the association by attaining Nibbāna.

The cosmography of which Mount Meru is the centre is a very detailed construction, and it is repeated in space and time to infinity. The pattern is unvarying and is known down to its minutest particular. Where and how all this information was obtained must always remain a matter for conjecture. It is disturbing to the modern mind to find the imaginative creations of the past taken for sober truth; but ancient thinkers were not committed to factual accounts. Experience, for them, was something almost entirely subjective, and it is on the subjective and subliminal level that we have to seek out the meaning of this strange geography.

Its most characteristic and striking feature is that uniformity which I have stressed. It bears the marks of an attempt to achieve orderliness within the diversity of experience, to reduce to a comprehensible pattern the contradictions and irrelevancies that confront us and to draw an inferential picture of the laws that govern them. The same kind of striving for geometrical design shows itself in the stylized art of ancient Egypt, in the rigid formalism of the Japanese *No* play to assert the continuity and harmony of life from its lowest to its highest aspects, to disclose an order of reality that is not apparent in the surface phenomena of nature. The need to reveal a structure, or where it seems to be absent to impose it upon the world of experience, is a universal one. Man is not secure in a chaotic world; he demands of the

universe that it should make sense. At different times this deep unconscious need has expressed itself in art, mythology, philosophy and science, and often in all of them simultaneously. The Magic Mountain is a symbol, and we are entitled to ask of a symbol nothing more than that it should suggest something which cannot be expressed directly. Man is the image of all that is; he is himself the *cakkavāḷa*, his body made up of the four great elements, his arterial blood the great oceans that course between his vital organs and the encircling bones. And just as Mount Meru stretches from the depths up to heaven, the bridge that makes it possible for every human being to strive towards the highest, so the vital core of man's structure, the great column through which the nerve-impulses flow, unites his being, from the lowest organs up to the seat of consciousness, in one integrated whole. Indeed this fathom-long body contains the world, its origin and its cessation: not in any figurative sense but in literal truth. When the yogin sits in *padmāsana*, his spinal column straight "like coins piled upon one another," his form is that of the cosmos, supported and united by Mount Meru. And when man first adopted the upright posture which distinguishes him from all other animals, it was the outward sign of his power to discriminate and command his life. Mount Meru was set up between heaven and earth, and all things, good and bad, fell into place.

The universe as we know it today has no "up" or "down." Nadir and Zenith have become relative and interchangeable

terms, and man has suffered a vertical disorientation. Yet the symbolism of Mount Meru has not lost its validity, if we choose to accept the Values it stands for. And it is well that we should do so, for they are abiding values, with their justification in our own being, irrespective of the view we take of the external world. It does not matter that heaven is beneath as well as above us; the heaven of our own experience is situated outside of space and time and there is no direction where it is or is not. It does not matter that no modern Moses goes up into Mount Sinai to commune with his God, nor that no Zeus hurls his thunderbolts from the summit of Olympus nor Indra from his citadel above the snowline of Hemavant; Mount Meru, the Magic Mountain of legend, is always with us, the eternal challenge to seek, to toil upwards—the call to stand erect and forge our destiny out of the materials and with the tools within our reach,

Each of us has at the centre of his cosmos a mountain that he must eventually climb. The path is steep and rugged, and there is only one—conquest of the self. But when he reaches the summit he can take the final leap that will separate him forever from the world of sense-desires and of suffering. It is only from the loftiest height of human attainment that we can at last see Nibbāna face to face.

Is There a Beginning? [21]

Buddhism does not so much deny the theory of a Creator-God as make the hypothesis not only unnecessary, but actually incompatible with the known facts. If, in order to exist, the world must have had a pre-existent Creator, how did this Creator himself come into existence, and by what laws was his own nature governed? If such a being was able to exist without a creator, the sole reason for assuming his own existence is removed, because the world itself can equally well exist without a prior cause. Can it indeed be said that the universe and the life process had any beginning, or are we constrained to think in the terms of beginnings only because of the limitations of our own mind?

A beginning is an event which has to take place at a specific point of space and time. It cannot occur in timeless void because the three conditions of time—past, present and future—which are necessary for the occurrence of any event, cannot obtain in a timeless state. For any event to take place, there must be the time before its occurrence (past), the time of its occurrence (present) and the time after its occurrence (future). But time is an altogether relative concept: there must be events taking place to enable time to exist, and it is only by the regular occurrence of certain events, such as the diurnal rotation of the earth and the seasonal changes, that can be known and measured.

The occurrence of events necessitates the existence of things. By things we mean objects that occupy space, and which by their movements in relation to one another mark not only divisions in time, but also measurable areas in space. Space and time, therefore, are a unity; a qualitative whole with quantitative parts, or relationships. We may consider them separately, but we cannot make any statements concerning the ones which do not in some way involve the other. This, stated broadly, is the basis of the theory of relativity. The knowledge of space and time depends upon consciousness and position without any fixed point of observation. Spatial and temporal movement is common to both the observer and the object observed, so that what can be known is not a "thing" but merely a relationship.

When this is understood it follows that there could never have been a beginning—an origin out of nothingness of the universe or the life process. It is true that the universe as we know it evolved out of the dispersed matter of a previous universe, and when it passes away its remains, in the form of active forces, will in time give rise to another universe in exactly the same way. The process is cyclic and continuous. The space-time complex is curved, and in a curved construction of inter-relationships there can be no point of origin or departure, so that in this series of related causes it is useless to look for any First Cause. We tend to look for first causes and think them to be necessary only because our minds are conditioned to spatial and temporal relativity; the mind, by its very nature, must operate within the

mechanism of which it is itself a part; it can deal only in relationships. This is why it is said in Buddhist texts: "the origin of phenomena is not discoverable, and the beginning of beings obstructed by ignorance and ensnared by craving is not to be found."

In the same way that one universe gives rise to another through the residual energy which is continually renewing itself—that is, through the principal of the indestructibility of matter—so the life of one being gives rise to another being which is not the same in identity and without involving an unchanging, permanent self. That which links them is called in Buddhism "kamma", or volitional activity; the continuation of the causal process is called "saṃsāra," or the cycles of rebirth; the actuality of rebirth and of existence without any unchanging principle of identity or self is called "anattā."

When it is said that world cycles or world periods, known in Buddhism as *kappas*, are of immeasurable duration, it must be remembered that all time concepts are relative; we measure them from our own standpoint. In an immeasurably vaster space context, the time context is correspondingly enlarged, so that events covering millions of years by our calculations can be measurable in terms of seconds. The brain may reel at the concept of an infinite of space-time constructions fitting into or impregnating one another endlessly in all directions, but it is not entirely outside the scope of human imagination. It figures quite largely in Buddhist thought; there are an infinite number

(conventionally expressed as “ten thousand”, or “incalculable”) world-systems and thirty-one planes of existence having vast differences in time measurement.

What is unthinkable is a state of non-causality where neither space, time nor events have any existence. This has to be understood by direct perception, which means bursting the bonds of relativity and its concepts and processes, and contacting within oneself the *asaṅkhata* or unconditioned element. The thinking, reasoning and discursive mind, having exhausted its exploration of phenomena and discovered them to be all impermanent and void of essential reality, must transcend this mechanism, call a halt to the generative impulses, and thus bring about final liberation from all processes. This final liberation is called *Nibbāna*.

Buddhism and the Origin of Life [22]

The Buddha did not give any specific teaching regarding the origin of the universe or of life. The question was said to be unanswerable from the level of ordinary mundane intelligence In the Aṅguttara Nikāya it is said: "The origin of beings revolving in saṃsāra, being cloaked by *avijjā* (ignorance) is undiscoverable." At the same time it is laid down, as a natural consequence of the law of Dependent Origination (*paṭicca samuppāda*) that in the ceaseless cycle of cause and effect there cannot be any link in the sequence that can be designated a first cause. Each effect in its turn becomes a cause, and the beginning is nowhere apparent; it is a closed circle of related conditions, each factor being dependent on the preceding ones.

The early Buddhists, because of this silence on the part of the Buddha, and His unwillingness to attempt the hopeless task of explaining the inexplicable, took their ideas concerning the nature of the universe from the Brahmanical teachings already current in India. These, because of their remarkable correspondence to modern scientific concepts, are well worth examination.

In the first place, it must be realised that the Vedic teachings, because of the lack of technical and scientific

knowledge and the necessary vocabulary in which to express such modes of thought, used allegory and symbolism, much of it being of a primitive and animistic kind. The early Buddhists found the concepts of Brahman and Ātman unnecessary and, while adhering in outline to the Brahmanical idea of the universe, they considered it to be self-sustained by laws inherent in its own nature, the whole group of laws being part of the universal law of kamma, or cause and effect. The universe consists of innumerable *cakkavāḷas* or world systems. These come into being and pass away again in an endless cycle covering periods of millions of years, called *kappas* and *yugas*. The system of chronology is complicated and unthinkably immense, as is the number of inhabited World-systems in this cosmic mechanism. It is unnecessary to go into the divisions of time in detail, but a sufficient indication of their tremendous span can be gained from the fact that a *yuga* is equivalent to several millennia, and that eight of these *yugas*, representing a cycle, makes one small or *antara kappa*. Twenty small *kappas* constitute a middle or *asaṅkheyya kappa*, and a full cycle of four middle *kappas* is called a great or *mahā kappa*, which is the largest unit of calculation. Each great *kappa* is the cyclic period of a world-system, during which the entire process of coming into being, existence, decay and destruction is brought into operation. After the destruction of a world-system another immense period of time elapses, at the end of which the process begins over again, the whole being repeated ceaselessly, without

beginning or end.

Turning to the Brahmanical theory we find a similar general pattern of events. Vedanta teaches that the cycles of the universe are divided into the "days and nights of Brahmā." In the beginning the whole of the basic material substance of the universe is evenly distributed throughout space. This material substance is called *Prakṛti* (matter) and is to be considered as atomic units in a state of almost complete balance and almost complete inertia. Gradually, over unimaginable aeons of time, a slight movement in this vast ocean of matter gathers impetus and gradually the mass comes to life. In Vedantic phraseology it is said that *Prakṛti* is animated by *Puruṣa* or Spirit; the Brahman is manifesting through the material substance. This substance becomes differentiated into worlds, and living beings appear. Cosmic evolution then comes into play and the cycle of the universe runs its course, through development and degeneration to decay. When the period of the cycle is completed the universe disintegrates and returns to the same state of undifferentiated material elements as before. Again the process repeats itself, without beginning and without end.

The Buddhist view is much the same, except that, as stated before, in place of the Brahman or any controlling deity Buddhism substitutes the law of cause and effect; one universe or world-system arises from the kamma, or causal genesis, of the one preceding it.

The *Visuddhimagga* summarises the process thus:

"Na h'ettha devo brahmā va
saṃsārass'atthi kārako,
Suddhadhammā pavattanti
Hetusambhārapaccayāti"

"There is no god or Brahmā who is the creator of this world. Empty phenomena roll on, all subject to causality."

The astronomers Jeans and Eddington are among those who have attempted some speculation regarding the origin of the universe. Eddington, calculating the recession of the spiral nebulae from the colour changes in the spectrum, has formed the theory that the entire universe is in process of expansion. The countless planets and solar systems comprising it are governed by the law of cosmic attraction and repulsion, which is a law inherent in the nature of matter. It is this law which holds together all the material substance of which the universe is composed, from the smallest atomic units to the largest planet. It is believed that in the course of expansion of the universe one of two things will, eventually, happen: either it will reach its maximum point of expansion and the law of cosmic repulsion will cause the atomic elements to scatter throughout space, or else the law of cosmic attraction will gain the upper hand and the process will be reversed, causing the universe to shrink back on itself. In either case, the ultimate result will probably be the same; that is, the atomic elements will become uniformly distributed throughout space. Eddington

has also hazarded the guess that this is the primal state from which the universe first took form, that is to say that his imaginative picture of it before "creation" is very similar to that of the Vedantic and Buddhist conception. Again, we are to imagine the whole of space filled with atoms, electrons and neutrons in an almost perfect state of balance and homogeneity. In this undifferentiated mass there is only a slight movement or vibration, but over incalculable aeons the movement becomes more pronounced as the law of cosmic attraction and repulsion comes into play. Gradually the even distribution of substance forms clots, masses of electronic particles being drawn together, so that in time whirling masses of gaseous matter are formed, and from these emerge what astronomers call the "island universes" - that is to say, systems forming themselves round a central nucleus, like our own solar system. It is obvious that this process, as in the Buddhist system, can be repeat over and over again.

In this way science does away with the need for a creator god, but still it has not explained the origin of the movement in the inert matter, which carries the process forward. Buddhism explains it as being kamma, that is, the principle of the indestructibility of force or energy. The movement is the residuum of activity from the previous universe, which never entirely ceases, though that universe itself has ceased to exist. When we examine the operation of kamma as it functions in the rebirth of living organisms it becomes possible to relate it to the cosmic process and trace

the parallel between the kamma of a sentient being and the kamma of material phenomena.

From this comparison of modern scientific ideas and the teachings of over two thousand years ago it will be seen how strikingly they agree. The question then arises: How was it possible for the sages of that remote period to penetrate the illusion of material substance and find that it was composed of electronic forces, and to form so accurate an idea of the nature of the universe and its processes? The answer can only lie in the belief that they were able to raise their consciousness beyond the sphere of the mundane, through the practise of jhāna or meditation. They had no laboratory equipment, no microscopes or telescopes and no mathematical formulae to guide them; and, when they had made their discovery they had no technical language or common basis of knowledge by which to impart their discoveries to others. It would indeed have been hopeless for the Buddha to attempt a description of the nature of the universe on these lines; no one of His time would have been capable of understanding Him.

That is why He refused to answer questions concerning the origin of the world or whether it was eternal or not eternal. Had He given an affirmative reply or a negative one to either question it would have been in a sense untrue. The Buddha's reply, in effect, was that such questions were not conducive to release from rebirth; but the implication always remained that the true knowledge could be gained by oneself, through insight, though it could not be imparted

to others. The Iddhi, or so-called "supernatural powers" gained by the Arahats were simply the knowledge of hidden laws of the universe and how to make use of them, but by Buddha they were regarded as only another and greater obstacle to the attainment of freedom and the quenching of desire.

The law of causality is like an iceberg; only one eighth of it or less is visible above the surface. We observe the effects while remaining ignorant of the causes, just as when we switch on the electric current and the light appears. The scientist Max Planck wrote: "What sense is there, then, it may be asked, in talking of definite causal relations in regard to causes where nobody in the world is capable of tracing their function? The answer to that question is simple. As has been said again and again, the concept of causality is something transcendental—quite independent of the nature of the researches, and it would be valid if there were no perceiving subject at all… . We must distinguish between the validity of its [application]. This means that even the scientist has to admit causes beyond his comprehension. The Buddha stated: "Whether Buddhas arise or do not arise (to perceive and reveal the Law) the law of causality, the principle of the dependence of this upon that, the causal sequence of events, remains a fixed and unalterable law."

"The concept of causality is something transcendental." This is a significant phrase indeed, coming from a scientist. It is just in this transcendental concept of the causal law that

Buddhism establishes the moral principle of kamma. The materialist rejects the idea of God and Soul; and because he sees no evidence of a spiritual or other purpose in life, he rejects all belief in the moral order of the universe as well. Buddhism also is independent of a theistic creator and of a soul or ego principle, but Buddhism maintains the validity of the moral law. Buddhism admits the infinite multiplicity of worlds and the apparent insignificance of man—yet man is the most significant of all beings, according to Buddhism, man is of more significance than the gods. Why is this? Because the gods are merely enjoying temporarily the results of good actions in the past, but man is the master of his own destiny—on the battlefield of his own mind he can conquer the ten thousand world-systems and put an end to saṃsāra, just as did the Buddha. But to do this he must understand the nature of kamma. The principle that governs his internal and external world.

According to the Aṅguttaranikāya, [23] to believe that the cause of happiness or misery is God, Chance or Fate, leads to inaction. Our spiritual evolution depends upon ourselves and ourselves alone. If there is any force behind the moral laws, any exercise of free-will in the choice between good and evil, right and wrong, it stands to reason that there must be the possibility of advancing or degenerating, evolution. If progress upwards were a mechanical process and a foregone conclusion, there would be no point in any freedom of choice in a world of opposites.

The nineteenth-century Darwinists believed that the course

of biological evolution represented a steady upward progression from rudimentary to complex forms of life, and hence from primitive social structures to higher states of civilization. On this too-facile assumption, with its essentially materialistic basis, they built up an edifice of optimistic belief in the destiny of mankind. It was thought that humanity itself would automatically improve with the increase of knowledge, and perhaps evolve into a yet higher species. Later knowledge showed that their supposition was fundamentally false; they did not at that time know enough about the processes of natural selection or the history of the various links in the biological chain. Evolution, we now know, does not move consistently upwards nor, as Karl Marx postulated, in an ascending spiral. It progresses in waves, and the currents produced by it are continually changing direction, often turning back to their point of origin. Some species improve, while others degenerate and disappear. Evolution may be depicted on a graph as a succession of ascending and descending curves, but its most representative form is that of a circle. Whatever steady upward movement there may be is more an individual movement than a collective one. It is essentially the individual that evolves, and the illusion of collective evolution follows upon the appearance of groups (e.g., the human species) whose individual members have reached a certain level of being with sufficient uniformity to constitute a type. This comes about through the operation of incalculable factors in their past personal history, which

science does not take into account because they are not normally open to scientific investigation. Those unknown factors are the kammas, or activities, which relate man's being to the moral principles of the universe.

If it were true that evolution takes place solely on a physical basis and is consistently progressive, all human beings at any specific stage would display uniform characteristics; it is only by taking the individualist and spiritual view that we can explain the appearance of a Buddha, or, indeed of any lesser leader who has shown himself to be far in advance of his contemporaries.

The analogy of a wave or ripple, travelling in a circle, is perhaps the best symbol of the individual evolutionary current. Just as in biological evolution there are advances and recessions, successes and failures, so in spiritual evolution the individual sometimes rises and sometimes falls. There is no stability and no constant direction to his course. Because of his actions he may take birth as a human being, only to fall from that relatively high estate to become once more an animal. This is what the Buddha called "drifting in the ocean of saṃsāra" and those who see the processes of biological evolution also as a purposeless, meaningless drifting, can trace a close correspondence between the manifested material laws and the invisible spiritual ones that motivate them. The materialist who declares that life has no ultimate purpose is making a safe deduction from the evidence available to him. In the material sense it has no purpose, and can never arrive at a

state of perfection. But he is only considering the material aspect of life and ignoring its spiritual undercurrents, which are in reality the true determining factors behind phenomenal appearances. It is to those that we have to turn when we seek for a meaning and objective in our mundane existence. Knowledge—or rather, *paññā*—gives us sight of the goal and the means of attaining it. We do not find the meaning of life within the circle of evolutionary Processes, but outside it.

The astronomer Jeans has voiced the spirit of modern scientific logic in his conclusion that the more we come to know of the universe and its Workings, the more surely are we driven to the belief that it is in some way the manifestation of thought, or of some kind of mental process comparable to our own. Where other scientists quarrel with his view is on the ground that it appears to savour of a return to the discarded idea of a personal creator-god. It is precisely here that Buddhism bridges the gulf between religious and scientific thought. For Buddhism, while endorsing the view that the ultimate basis of the universe is mind, does not require a god, or any external agency, to provide that mind. The processes of the evolving (*saṃvatta*) and devolving (*vivatta*) universe are carried on by the mental activities of the sentient beings that are a part of it. It is this mind-force, not that of any god, that causes the physical universe to materialise and go through the stages of growth, decay and dissolution.

The starting-point of all mental and bodily activities is

craving—the *taṇhā* of Buddhist philosophy. In the lowest grades of evolution this craving is supreme, and there it means cravings of purely sensual and material kind. The individual evolves spiritually by rising above these, but at any stage of his progress be is liable to become possessed once more by the lower forms of craving, and so may sink down again. As a human being he becomes a battleground in which the lower cravings struggle against higher ones, represented by cravings that we may class as intellectual, aesthetic or even spiritual. When the higher cravings triumph we call it in modern parlance "sublimation," but this sublimation is merely the replacement of grosser cravings by more intellectualised ones. To put an end to the aimless drifting in saṃsāra, even these sublimated cravings must be abandoned. They are called *rūpa-rāga* and *arūpa-rāga*—desire for life in the worlds of form and in the formless, purely intellectualised spheres For example, the artist who has sublimated his lower instincts into an aesthetic appreciation of the beauty of nature and the human form, provided he has lived in accordance with moral laws (which sublimation enables him to do), is likely to re-manifest in the sphere of the *rūpa deva-lokas*, where beauty of form is the characteristic quality. But a philosopher, or ascetic who has sublimated his instincts into a love of abstract thought, meditation or any such activity divorced from material contexts, qualifies himself for rebirth in the *arūpa Brahmā-lokas* where existence is non-material and consists purely of zones of mental force. This is the

highest type of evolutionary existence in saṃsāra, in which craving is reduced to its lowest ebb and most etherealised form; yet, because craving is still present, the being who has attained this condition may still continue to drift in the currents of saṃsāra. Complete release from the cycle of existence only comes with destruction of craving and the ego-delusion. This is Nibbāna.

From the foregoing account of the physical universe as it is viewed by Buddhism and modern science—that is, as a cyclic process extending over unimaginable aeons—we see that it is incorrect to equate the beginning of life with the beginning of the earth, the solar system or even this particular universe. The question still remains in what way did life originate, however far back in time its beginning may have been?

Science does not provide any solution. It puts forward a tentative theory that sentient life appeared on this earth through a technical process combined with the action of cosmic rays and the heat of the sun. But this is only a theory, and may-well be modified, though it is interesting to note in passing that the Buddhist doctrine that living beings appeared through the action of *tejo* (kinetic energy) combined with: *utu* (*utuja* meaning arisen from seasonable circumstances and physical law of causation), offers a similar explanation so far as mundane life is concerned. This, in any case, only carries speculation back to the beginning of life on this planet, but the actual origin we seek is the beginning of life from a point where there was no

preceding cause, and this cannot be found.

Theistic religion also fails to answer the question. In ascribing the origin of living creatures to a Creator-god it still leaves unanswered the problem of how and why the god himself came into being. If a god can exist, though uncreated, there is no reason why the other phenomena of the universe should not exist without having been created also.

The actual truth is that the idea of the necessity for creation or, in other words, the search for a beginning of the causal process, springs from the limitations of the human mind, which can only conceive phenomenal things in their arising, decay and dissolution. In the circle of causal links there is no First Cause. The universe could not have been created out of nothingness because in a condition of void, empty of phenomena and events, there could be no pro-existence of time. As a concept, time can only exist in relation to physical bodies and their movements in space; this is the basis of Einstein's "space-time continuum." It is apparent, therefore, that time could not have existed prior to the existence of the physical universe on which it depends. But, for an act of creation to take place, there must be time already in existence because creation requires the three phases of time; i. e., past (before the thing created came into being), present (the phase of its momentary existence) and future (the time of its continued existence and ultimate cessation). Without the existence of time in these three phases there could not be any point at which a thing not existing previously could

come into being. And without the physical universe there cannot be any concept of time unrelated to change, spatial movement or events. All human reasoning ends in a paradox because it follows the periphery of a circle, the sphere embracing time, space and phenomena. All that reason can do is to show that the process of saṃsāra is without any discoverable beginning and that a first cause, in the sense in which we understand it, is not only unnecessary, but impossible. The truth can only be gained by Insight, in accordance with the teachings of the Exalted Buddha, which means rising above the realm of relative and conditioned factors. That point being gained, it will be found that there is no answer to the problem, but that the problem never existed, save as an illusory product of Ignorance (*avijjā*).

Editor's Note

The first three essays in this volume are unpublished material from the late author's posthumous papers; while the last three had appeared before in the periodicals mentioned in the footnotes.

The titles of the first and the second essay were chosen by the editor. In the original manuscript, the first essay had the title "Of Gods and Men," which, however, the author had later used for a shorter and different article, published in the series *Bodhi Leaves*. The second essay was left uncompleted by the author. Though it is not customary for this series to publish unfinished material, this essay on Buddhist cosmology was considered substantial and instructive enough to be included here.

Notes

1. Saṃsāra—the cycle of rebirths; the world.
2. Who had his "*daimon*".
3. In contrast to this we find Sakka, a king among the Sense-desire devas, asking the Teacher of Gods and Men for religious instruction. Just so do worldly men occasionally show more good sense than some philosophers!
4. Buddhism teaches that matter is composed of atoms (*paramāṇu*) and is in a continuous state of flux. In modern terms we should say that it consists of waves or vibrations in the space-time continuum. The arising and passing away of the units of consciousness, which is also flux, bear a certain relation to the frequencies of the flow of matter which causes the impression that there is an enduring "thing" while in fact there is only a process.

   An analogy may be found in the seeming continuity of a film, which is made up of separate still pictures passing through the projector. In certain circumstances the illusion breaks down. When the revolutions of a wheel on the screen do not synchronize with the rate of the separate pictures of it, nor with the rate of visual

perception, the wheel appears to be revolving backwards while the carriage is moving forward!

5. In the Mahāparinibbāna Sutta, where it is stated that the Buddha could, had he wished, have lived on to the end of the Kappa, the period there signified is said by some to be the normal duration of a human life, which is taken as being one hundred years. Others consider that it means until the end of a world-period, at which point all material things pass away.

6. *Niyāma Dīpanī,* by Ledi Sayādaw Mahāthera, transl. by Beni Barua, D. Litt, M.A. and U Nyana Patamagyaw. Rangoon 1921, page 18ff.

7. *The Universe*, by A. Oparin and V. Fesenkov, p. 60.

8. V. Fesenkov. Op. cit. p. 232.

9. Ledi Sayādaw, *Niyāma Dīpanī,* p. 19.

10. Henri Bergson, *Philosophy of Change,* p. 15 sq.

11. Ledi Sayādaw, *Niyāma Dīpanī,* p. 20.

12. Fred L. Whipper, *Earth, Moon and Planets,* pp. 163, 181.

13. V. Fesenkow, *The Universe,* p. 225.

14. In Mesopotamian tradition, in the Bible, in the Hindu *Purāṇas* and even in ancient South American civilisation.

15. In these two Discourses the Buddha describes how, after encountering in the trance state a Brahmā of radiant form who himself believed that he was the creator of the

universe happened what? Sages of the past taught this theory as revealed religion. See *Buddhism and God Idea* (The **Wheel No. 47**), p. 9.

16. See Oparin, *The Universe,* p. 34f.

17. Ledi Sayādaw; *Niyāma Dīpanī,* p. 56.—Dr. Johnson believed that eels came into existence spontaneously in water.

18. From *The Maha Bodhi*, vo. 75, No. 7; 1967.

19. Referred to in the Vinaya, where Maha Moggallāna Thera is said to have offered to turn the *cakkavāḷa* upside down so that the bhikkhus could obtain nourishment during a severe famine.

20. Brahmajala Sutta etc.

21. From *The Young Buddhist,* Year Book of the Buddhist Societies of the University of Singapore and the Singapore Polytechnic; 1968/1969.

22. From *Burma,* Rangoon, Vol. III, No. 1; 1952.

23. The Threes, No. 61; translated in *Aṅguttara Nikāya, An Anthology. Part I,* (The **Wheel No. 155/158**), p. 43

Chart

Or see the **web page** chart of the 31 abodes.

The Thirty-one Abodes

Key to the Chart			The Thirty-One Abodes		Translation of the Chart	Classification by way of birth-cause in the respective worlds
Immaterial sphere (*arūpa loka*)	Brahmā worlds of disembodied consciousness (immaterial sphere)	Beings having consciousness without material body	31.	*Nevasaññānāsaññāyatanūpagā deva*	Sphere of neither-perception-nor-non-perception	Experience of the four *arūpāyatana jhānas* (the formless sphere absorptions)
			30.	*Ākiñcaññāyatanūpagā devā*	Sphere of the knowledge of nothingness	
			29.	*Viññāṇañcāyatanūpagā devā*	Sphere of the infinity of consciousness	
			28.	*Ākasañcāyatanūpagā devā*	Sphere of the infinity of space	
Fine-material sphere (*rūpa loka*)	Pure Brahmā worlds (inhabited by non-returners and arahats)	Beings having material body and consciousness	27.	*Akaniṭṭhā Brahmā*	World of supreme Brahmās	Attainment of the fruit of non-returning (*anāgāmi-phala*) with full experience of the fourth jhāna
			26.	*Sudassī Brahmā*	World of clear-sighted Brahmās	
			25.	*Sudassā Brahmā*	World of beautiful Brahmās	
			24.	*Ātappā Brahmā*	World of serene Brahmās	
			23.	*Avihā Brahmā*	World of immobile Brahmās	
	Lower Brahmā worlds	Beings having material body without consciousness	22.	*Vehapphalā Brahmā*	World of sensationless Brahmās	Moderate experience of the fourth jhāna
		Beings having material body and consciousness	21.	*Asaññasattā Brahmā*	World of greatly-rewarded Brahmās	Weak experience of the fourth jhāna (mental absorption)
			20.	*Subhakiṇhā Brahmā*	World of Brahmās of steady aura	Full experience to the third jhāna
			19.	*Appamāṇā Subha-brahmā*	World of Brahmās of infinite aura	Moderate experience of the third jhāna
			18.	*Parittā Subha-brahmā*	World of Brahmās of minor aura	Weak experience of the third jhāna (mental absorption)
			17.	*Ābhassarā Brahmā*	World of radiant Brahmās	Full experience to the second jhāna
			16.	*Appamāṇābhā Brahmā*	World of Brahmās of infinite lustre	Moderate experience of the second jhāna
			15.	*Parittābhā Brahmā*	World of Brahmās of minor lustre	Weak experience of the second jhāna (mental absorption)
			14.	*Mahā Brahmā*	World of Great Brahmās	Full experience to the first jhāna
			13.	*Brahmapurohitā Brahmā*	Ministers of Brahmā	Moderate experience of the first jhāna
			12.	*Brahmapārisajjā Brahmā*	Retinue of Brahmā	Weak experience of the first jhāna (mental absorption)
Sense-desire sphere (*kāma loka*)	Worlds of devas of the sense-desire sphere		11.	*Paranimmitavasavattī devā*	Devas enjoying (or utilising) the creations of others	Very good kamma (in the field of worldly activity)
			10.	*Nimmānaratī devā*	Devas enjoying their own creations	
			9.	*Tusitā devā*	Devas enjoying pleasure	
			8.	*Yāmā devā*	Yāma devas	
			7.	*Tāvatiṃsā devā*	Realm of the thirty-three devas	
			6.	*Cātumahārājikā Devā*	Realm of the Four Great Kings (of the Four Quarters)	
	Human World		5.	*Manussa Loka*	The human world	Mixed kamma, predominantly good
	Sub-human worlds (including animals)		4.	*Tiracchāna Yoni*	The animal world	Unwholesome kamma
			3.	*Peta Loka*	World of unhappy spirits	
			2.	*Asura Nikāya*	World of demons (titans)	
			1.	*Niraya*	Realms of inferno (hells)	

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