Chapter 3

Some Metaphysical Principles Pertaining to Nature

We have so far often mentioned metaphysics. It is now time to define what we mean by this all important form of knowledge, whose disappearance is most directly responsible for our modern predicament. Metaphysics, which in fact is one and should be named metaphysic in the singular, is the science of the Real, of the origin and end of things, of the Absolute and, in its light, the relative. It is a science as strict and exact as mathematics and with the same clarity and certitude, but one which can only be attained through intellectual intuition and not simply through ratiocination. It thus differs from philosophy as it is usually understood.[1] Rather, it is a *theoria* of reality whose realization means sanctity and spiritual perfection, and therefore can only be achieved within the cadre of a revealed tradition. Metaphysical intuition can occur anywhere—for the 'spirit bloweth where it listeth'—but the effective realization of metaphysical truth and its application to human life can only be achieved within a revealed tradition which gives efficacy to certain symbols and rites upon which metaphysics must rely for its realization.

This supreme science of the Real, which in a certain light is the same as gnosis, is the only science that can distinguish between the Absolute and the relative, appearance and reality. It is only in its light that man can distinguish between levels of reality and states of being and be able to see each thing in its place in the total scheme of things. Moreover, this science exists, as the esoteric dimension, within every orthodox and integral tradition and is

united with a spiritual method derived totally from the sources of the tradition in question.

In the traditions of the East, metaphysics has been continuously alive to this day, and despite differences of foundation there is a unity of doctrine which justifies the use of the term 'Oriental Metaphysics',[2] although metaphysics knows no Orient or Occident. In the West there has also been true metaphysics of the highest order, among the Greeks in the Pythagorean-Platonic writings, and especially in Plotinus. In all these cases metaphysics is the doctrinal exposition that was the fruit of a living spiritual way. Likewise in Christianity one finds metaphysics in the writings of some of the early founders of Christian theology like Clement and Origen, Irenaeus, Gregory of Nyssa and Gregory of Nazianzen, in Erigena, Dante and Eckhart and again in Jacob Böhme. Among Orthodox writers there is an even more open and complete metaphysical exposition than that which is found among Latin authors. But even the official theology of the Latin church, especially the Augustinian school, contains metaphysics which, however, is much more hidden and indirect.

In Western philosophy, however, since Aristotle the unfortunate practice of considering metaphysics as a branch of philosophy came into being so that with the appearance of philosophical doubt metaphysics has also been discredited. In this domain, the rationalism of later Greek philosophy fortified the tendency within official Christian theology to emphasize will and love rather than intelligence and sapiential knowledge. These two factors combined to make of metaphysics and gnosis a peripheral aspect of the intellectual life of Western man, especially since the end of the Middle Ages and the Renaissance. What is usually called metaphysics in post-medieval philosophy is, for the most part, nothing but an extension of rationalistic philosophy and at best a pale reflection of true metaphysics. The so-called metaphysics that philosophers like Heidegger have criticized and consider as having come to an end is not the metaphysical doctrine we have in mind. Metaphysics, tied to a philosophy that is at once perennial and universal, knows no beginning or end.

It is the heart of the *philosophia perennis* to which Leibnitz referred.

In as much as the loss of metaphysical knowledge is responsible for the loss of harmony between man and nature and of the role of the sciences of nature in the total scheme of knowledge, and by the fact that this knowledge has been nearly forgotten in the West while it has continued to survive in the traditions of the East, it is to these Oriental traditions that one must turn in order to rediscover the metaphysical significance of nature and to revive the metaphysical tradition within Christianity. If the East is learning by compulsion and necessity the Western techniques of domination over nature, it is from Oriental metaphysics that one must learn how to prevent this domination from becoming sheer self-annihilation.

Turning first to the Far East we see in the Chinese tradition, especially in Taoism and also in Neo-Confucianism, a devotion to nature and a comprehension of its metaphysical significance that is of the greatest importance. This same reverential attitude toward nature, together with a strong sense of symbolism and an awareness of the lucidity of the cosmos and its transparency before metaphysical realities, is to be found in Japan. Shintoism has strongly fortified this attitude. That is why in the art of the Far East, especially in the Taoist and Zen traditions, paintings of natural scenes are veritable icons. They do not just evoke a sentimental pleasure in the onlooker but convey grace, and are a means of communion with transcendental reality.

In Taoism there is always the awareness of the presence of the transcendent dimension symbolized by the void so dominant in landscape paintings. But this void is not non-being in the negative sense, but the Non-Being which transcends even Being and is dark only because of an excess of light. It is like the divine darkness to which Dionysius the Areopagite refers, or the wilderness of Godhead (*die wüsste Gottheit*) of Meister Eckhart. That is why this Non-Being or Void is also the principle of Being, and through Being the principle of all things. So we read in the sacred text of Taoism, the *Tao Te-Ching*:

'All things under Heaven are products of Being, but Being itself is the product of Not-Being.'[3] In this simple assertion is contained the principle of all metaphysics, in pointing to the hierarchic structure of reality and the dependence of all that is relative upon the Absolute and the Infinite, symbolized by the Void or Non-Being that is unbound and limitless. Likewise Chuang-Tzu affirms the same principle somewhat more elaborately when he writes:

'In the Grand Beginning (of all things) there was nothing in all the vacancy of space; there was nothing that could be named. It was in this state that there arose the first existence;—the first existence, but still without bodily shape. From this things could then be produced (receiving) what we call their proper character. That which had no bodily shape was divided; and then without intermission there was what we call the process of conferring. (The two processes) continuing in operation, things were produced. As things were completed, there were produced the distinguishing lines of each, which we call the bodily shape. That shape was the body preserving in it the spirit, and each had its peculiar manifestations, which we call its Nature. When the Nature has been cultivated, it returns to its proper character; and when that has been fully reached, there is the same condition as at the beginning.'[4]

In as much as Heaven, in the metaphysical sense, and in its characteristic Chinese usage, comes from the Origin and Earth, again in its metaphysical significance, from Heaven, man must live in this world with a full awareness of the hierarchy. For as the *Tao-Te Ching* asserts: 'The ways of men are conditioned by those of earth, the ways of earth by those of heaven, the ways of heaven by those of the Tao, and the Tao comes into being by itself.'[5] Heaven is thus a reflection of the Supreme Principle and the Earth the reflection of heaven. The Earth of Taoism is not profane nature that stands as gravity opposed to grace, but it is an image of a divine prototype whose contemplation leads upward toward that reality for which 'heaven' is the traditional expression. For this reason also the world can be known, in a

metaphysical and not empirical sense, through its Cause and Principle.

'The World has a First Cause, which may be regarded as the Mother of the World. When one has found the Mother, one can know the Child. Knowing the Child and still keeping the Mother, to the end of his days he shall suffer no harm.'[6]

That science is safe and without harm which realizes the manifestation without losing sight of the Principle.

It is of cardinal importance that the Tao is both the Principle, the way to attain the Principle and also the order of things. It is in fact the order of nature[7] if we remember all that Taoism means by nature. Tao, the Principle that is also the order and harmony of all things, is everywhere present, in everything that is great or small. 'The Tao does not exhaust itself in what is greatest, nor is it ever absent from what is least; and therefore it is to be found complete and diffused in all things.'[8] To live in peace and harmony with nature or the Earth, one must live in harmony with Heaven, and in order to attain this end one must live according to the Tao and in conformity with it, the Tao which pervades all things and also transcends all things.[9]

Nature, as the direct effect of the Tao and its laws, stands as opposed to the trivialities of human artefacts and the artificiality with which man surrounds himself. For as Chuang-Tzu says, 'what is of Nature is internal. What is of man is external ... That oxen and horses should have four feet is what is of Nature. That a halter should be put on a horse's head, or a string through an ox's nose, is what is of man.'[10] That is why the aim of the spiritual man is to contemplate nature and become one with it, to become 'natural'. This is not intended in a pantheistic or naturalistic sense, but in a metaphysical sense, so that to become natural means to abide fully by the Tao which is at once both transcendent and the principle of nature. The aim of the sage is to be in harmony with nature for through this harmony comes harmony with men and this harmony is itself the reflection of harmony with heaven. Chuang Tzu writes, 'Anyone who sees clearly the

excellence of all nature may be called God's Trunk or God's Stock, because he is in harmony with nature. Anyone who brings the world into accord is in harmony with his fellow men and happy with men. Whoever is in harmony with nature is happy with nature.'[11]

To be happy with nature means precisely to accept its norms and its rhythms rather than to seek to dominate and overcome it. Nature should not be judged according to human utility nor earthly man made the measure of all things. There is no anthropomorphism connected with man's relation with nature.[12] Man should accept and follow the nature of things and not seek to disturb nature by artificial means.[13] Perfect action is to act without acting, without self-interest and attachment, or, in other words, according to nature which acts freely and without greed, lust or other ulterior motives. There is in fact in Taoism an opposition to the application of the sciences of nature for the purely material welfare of man as seen in the well-known story recorded in the works of Chuang-Tzu:

'Hwang-Tî had been on the throne for nineteen years, and his ordinances were in operation all through the kingdom, when he heard that Kwang Khăng-Tze [a Taoist sage] was living on the summit of Khung-Thung, and went to see him. "I have heard," he said, "that you, Sir, are well acquainted with the perfect Tâo. I venture to ask you what is the essential thing in it. I wish to take the subtlest influences of heaven and earth, and assist with them the (growth of the) five cereals for the (better) nourishment of the people. I also wish to direct the (operation of the) Yin and Yang, so as to secure the comfort of all living beings. How shall I proceed to accomplish those objects?" Kwang Khăng-Tze replied, "What you wish to ask about is the original substance of all things; what you wish to have the direction of is that substance as it was shattered and divided. According to your government of the world, the vapours of the clouds, before they were collected, would descend in rain; the herbs and trees would shed their leaves before they become yellow; and the light of the sun and moon would hasten to extinction. Your mind is that of a

flatterer with his plausible words;—it is not fit that I should tell you the perfect Tâo.'"[14]

It must be remembered that this same Chinese civilization in which such a contemplative view of nature was cultivated, and where there was even opposition to the application of the sciences of nature, developed physics, mathematics, astronomy and natural history and furthermore has been known throughout history for its technological prowess and genius. It must, moreover, be remembered that most of the early alchemists, geologists and pharmacologists in China were Taoists;[15] and that the polarization of Heaven and Earth and the religious significance of nature persisted as long as the Chinese tradition remained strong. The metaphysical significance of nature as expounded in Taoism, and also Buddhism, while even contributing to the development of sciences of nature, remained as a balance which preserved the hierarchy of knowledge and prevented nature from becoming profane.

The Chinese even developed an astronomical system, the *Hsüan yeh*, which like post-Copernican astronomy was based on an unlimited conception of space and time and was even used by proponents of the Copernican system in Europe against Ptolemaic astronomy. But in China this 'open cosmos' was again wedded to a metaphysical explanation and never allowed to destroy the harmony between man and nature that is so central to the Far Eastern traditions.

In Japan, likewise, we find the Taoist and also Buddhist conceptions of nature coming from China integrated with the local Shinto religion in which again, like all branches of the Shamanic tradition, there is a particular emphasis upon the significance of nature in a cultic sense.[16] Among a people with remarkable artistic sensitivity there developed the most intimate contact with nature, from rock gardens and landscape paintings to flower arrangements, all based on the knowledge of cosmic correspondences, sacred geography, the symbolism of directions, forms and colours. Spiritual methods became closely allied to the inward contemplation of nature and intimacy with its rhythms and forms.

The avid quest after things Japanese in the West in recent years is in many cases the sign of a hidden nostalgia to find peace with nature again and to escape the ugliness of the ambiance created by modern technology. In their special devotion to nature as a means of grace and spiritual sustenance, the traditions of the Far East in their metaphysics, science and art have a cardinal message for the modern world in which the encounter of man and nature is almost always on the basis of war and rarely of the peace which is so avidly sought after and so rarely found.

When we turn to the Hindu tradition, there also we find an elaborate metaphysical doctrine concerning nature along with the development of many sciences in the bosom of Hinduism, some of which in fact influenced Western science through Islam. When we think about the Hindu tradition, our attention usually turns to the Vedantic doctrine of *Atman* and *māya*, the world being considered not as absolute reality but as a veil that hides the Supreme Self. A simplistic interpretation of such a view, especially as prevalent among modern pseudo-Vedantins, would conclude that the world being *māya*, usually translated as illusion, it matters little whether one lives in virgin nature or the ugliest urban environment, whether one surrounds oneself with sacred art or the worst trash produced by the machine.

But this view is itself the worst possible delusion. It is *māya* pure and simple. What Hinduism asserts, like all Oriental doctrines, is the need to gain deliverance from the cosmos which is *māya*. But *māya* is not only illusion, which is its negative aspect, but also the divine play or art.[17] It veils the Supreme Self, the Absolute Reality, but also reveals and displays it. From the point of view of *Atman* or *Brahman*, the Universe is unreal; only the Absolute itself is Real in the absolute sense. For one living in *māya* the relative reality in which he finds himself is at least as real as his own empirical self, and can moreover, be an aid in his gaining deliverance. Although the cosmos is a prison for the sage it is also possible to transcend this prison through a knowledge of its structure and even with its aid. That is why Hinduism as

an integral tradition has developed elaborate cosmological and natural sciences and even spiritual techniques tied intimately to the use of the energy within nature. Yet, every science, physical, mathematical and alchemical, as well as the properly religious and spiritual ones, are connected to the total matrix both of Hinduism and in certain cases Buddhism and to the metaphysical principles dominating the whole tradition.[18]

Among the six *darshānas* or intellectual schools of Hinduism, none is as analytical and attached to the corporeal world as the *Vaiśeṣika*. This school is concerned with the physical world and holds a thoroughly atomistic view, beginning with the five elements or *bhutas* from which bodies are formed. It seems on the surface a system most akin to the atomistic and mechanistic physics that developed in the West in late Antiquity and again in the seventeenth century and which was usually anti-religious in its sentiment.[19] But in Hinduism, as in Buddhism, there developed an atomism combined with a spiritual view of the Universe. The *Vaiśeṣika* system is based on the knowledge of the six categories or *padārthas* which are: substance, attribute or quality, action, generality, individuality and inherence. Substance itself is nine kinds: earth, water, fire, air, ether, time, space, mind and spirit. Knowledge of the physical world, or ultimately these six categories, is correct knowledge (*tattvajñāḍna*), a knowledge that can only be attained through inner purity and with the help of *dharma* or grace, for it must be remembered that in the *Nyāya-Vaiśeṣika* system above the six *padārthas* stands Iśvara, the Personal Deity, who is the cause of the world.

A system as analytic and as closely concerned with natural things as the *Vaiśeṣika*, has as its end the deliverance of the soul from the atomistic world to which it is attracted by false knowledge.[20] In fact at the beginning of one of the main treatises of this school, the *Padārthadharmasangraha*, it is said, 'A treatise that deals with the properties of things can never lead to the highest bliss; as words cannot accomplish anything besides the denoting of the vernal meanings'. To which objection the answer is given; 'A knowledge of the true nature of the six categories—

substance, quality, action, generality, individuality and inherence—through their similarities and dissimilarities—is the means of accomplishing the highest bliss'.[21]

Knowledge of the external world is ultimately knowledge of oneself and even an analytical cosmological and natural science is not divorced from man's entelechy in the highest sense, namely deliverance from all limitation. This is not anthropomorphism at all. On the contrary it is the only form of knowledge through which man can escape the limitations of his own ego. Concerning the traditional founder of the *Vaiśeṣika* system, Kaṇādā, it has been said; 'He [Kaṇādā] had accomplished the knowledge of the principles (*tattvas*), dispassion and lordliness. He thought within himself that the knowledge of the principles of the six *padārthas* (predicables), by means of their resemblances and differences, is the only royal road to the attainment of self-realization, and that that would be easily accomplished by the disciples through the *dharma* (merit or worth) of renunciation.'[22] Thus the knowledge of nature is inextricably bound to moral and spiritual laws and the purity of the seeker after this knowledge. It seems as if Hinduism like so many other traditions had felt intuitively that the only safe way to penetrate the mysteries of nature and to cultivate physics, in the universal sense of this term, is to become saintly and to seek the saintly life.

Another of the *darshānas*, the *Sāṃkhya*, which contains one of the most elaborate cosmologies and natural philosophies in any tradition, likewise begins with the problem of the threefold pain present in the soul and the means to remove this pain, as is clearly asserted at the beginning of the *Sāṃkhya Kārikā*.[23] The three kinds of pain, which are the natural and intrinsic such as diseases, the natural and extrinsic such as any pain caused by an external source and finally divine or supernatural pain caused by spiritual factors, can only be overcome by an analytical knowledge of the three principles of this school, namely, the prime substance or nature (*Prakriti*), manifested matter that is in a state of flux (*vyakti*) and finally the Spirit that neither begets nor is begotten (*Puruṣa*).

The *Sāṃkhya* system seeks to remove the pain and misery of the soul through discriminative knowledge, *Sāṃkhya* itself meaning etymologically discrimination.[24] It begins with *Prakriti*, the maternal prime substance of the Universe or nature in its vastest sense from which through the action of the three cosmic tendencies or *guṇas*, namely *satwa*, *rajas* and *tamas*, or goodness, passion and obscurity or the upward, expansive and downward tendencies, the whole cosmic domain is brought into being. There are twenty-five *tattvas* or principles whose knowledge forms the basis of the *Sāṃkhya* system. There is first of all the four-fold division of things into the productive which is *Prakriti*, that which produces and is produced such as the intellect or *Buddhi*, that which is only produced such as the senses and the elements and finally that which neither produces nor is produced, that is, *Puruṣa*, the Universal Spirit which stands above and distinct from *Prakriti* and all its products.[25]

Furthermore, there is the more detailed division into the *tattvas*. Through the action of the *guṇas* which are present at all levels of cosmic reality, first the *Buddhi* or the intellect is generated and from *Buddhi* the principle of Egoism or *Ahankara*. From *Ahankara* there proceeds in turn the five subtle elements (*tanmatra*) which are the principles of the gross, corporeal elements. Also from *Ahankara* there come into being the eleven senses consisting of the five organs of sense, the five organs of action and the receptive and discriminative faculty (*manas*). From the subtle elements are produced the gross elements (*mahabuta*). Above this whole domain stands *Puruṣa* and the object of all sciences of nature is precisely for the soul to disentangle itself from the sense perceptions with which by mistake it identifies itself through the action of *manas* and *ahankara*.

The Universe itself which comes into being from the bosom of *Prakriti* or Nature is formed in such a way as to enable man to contemplate it in the metaphysical sense and thereby also achieve from it its separation or catharsis.[26] Moreover, once the spirit gains knowledge of nature, nature itself aids in this separation and withdraws from the scene. For as we read in the *Sāṃkhya-*

Kārikā: 'As a dancer having exhibited herself on the stage, ceases to dance, so does nature (*Prakriti*) cease (to produce) when she has made herself manifest to the soul.'[27] Thus in the *Sāmkhya* system as in the *Vaiśeṣika* the knowledge of nature leads to the catharsis of the soul and its deliverance. Moreover, Nature itself is an aid in this process of realization and assists that spirit which is armed with discriminative knowledge.

This theme of relying upon nature in the task of spiritual realization is carried to its full conclusion in the practices connected with Tantra Yoga. In Tantrism the *Śakti* or feminine principle becomes the incarnation of all force and power in the Universe, and through the use of this very power, as if riding upon the waves of the sea, the Yogi seeks to pass beyond nature and the ocean of cosmic manifestation. In Tantrism there is an elaborate correspondence between man and the cosmos, the spinal column itself being called the Meru of the human body.[28] In fact, in the Tantric way or *sādhana*, the body and flesh of man and the living cosmos are the most fundamental elements.[29] The Universe is the 'body of the Lord'[30] and by dying and burying himself in its bosom, in the arms of nature as the Divine Mother, the Yogi finds his deliverance. The death and resurrection of the Yogi is very much like the *salve et coagula* of medieval Christian alchemists and in fact Tantrism became connected to alchemy in India and presents doctrines closely resembling those of the Western Hermeticists who also died in the maternal principle in order to be reborn in the spirit and sought the 'glorious body' as the Tantric Yogis sought the 'body of diamond' (*vajrayāna*). Tantrism in its connection with alchemy presents a most profound symbolic interpretation of nature closely associated with a spiritual way. Because of its close parallel with the Christian alchemical tradition it is a most effective means of recollecting ideas and doctrines which in the West have been long lost and forgotten.

Indian civilization also developed a great many sciences which were completely integrated within the structure of the tradition. The *Vedāngas*, consisting of the six sciences of phonetics (*śikṣā*);

ritual (*kalpa*); grammar (*vyākaraṇa*); etymology (*nirukta*); metrics (*chandas*) and astronomy (*jyotiṣa*) came into being at the end of the Brāhmana period as inspired sciences (*smṛti*) as commentaries and complements of the divinely revealed Vedas (*śruti*).[31] *Vedānga* itself means literally 'limb of Veda' and implies that these sciences are an extension of the main body of the tradition contained in the Vedas. Below these sciences stands *Upaveda* (secondary Veda) consisting of medicine (*Ayur-veda*); military science (*Dhanur-veda*); music (*Gāndharva-veda*) and physics and mechanics (*Sthāpatya-veda*). Again these sciences are considered as an application of the principles contained in the Vedas to particular domains.[32] Even elements taken from Babylonian, Greek or Iranian sources were integrated into this traditional structure.

Furthermore, the sciences of arithmetic (*vyaka-ganita*); algebra (*bija-ganita*) and geometry (*rekhā-ganita*) which influenced Muslim and Western science so greatly were closely tied to the metaphysical principles of Hinduism and also Buddhism as we see in the relation between the indefinite of algebra and the metaphysical Infinite, or the number zero first used in Indian arithmetic and the metaphysical doctrine of the void (*shunya*).[33] There was thus at every level an intricate and inextricable bond between the sciences and the metaphysical principles of the tradition. No science was ever cultivated outside the intellectual world of the tradition nor was nature ever profaned and made the subject of a purely secular study.

When we turn to Islam we find a religious tradition more akin to Christianity in its theological formulations yet possessing in its heart a gnosis or *sapientia* similar to the metaphysical doctrines of other Oriental traditions. In this, as in many other domains, Islam is the 'middle people', the *ummah wasaṭah* to which the Quran refers, in both a geographical and metaphysical sense. For this reason the intellectual structure of Islam and its cosmological doctrines and sciences of nature can be of the greatest aid in awakening certain dormant possibilities within Christianity.[34]

One finds in Islam an elaborate hierarchy of knowledge integrated by the principle of unity (*al-tawḥīd*) which runs as an axis through every mode of knowledge and also of being. There are juridical, social and theological sciences; and there are gnostic and metaphysical ones all derived in their principles from the source of the revelation which is the Quran. Then there have developed within Islamic civilization, elaborate philosophical, natural and mathematical sciences which became integrated into the Islamic view and were totally Muslimized. On each level of knowledge nature is seen in a particular light. For the jurists and theologians (*mutakallimūn*) it is the background for human action. For the philosopher and scientist it is a domain to be analyzed and understood. On the metaphysical and gnostic level it is the object of contemplation and the mirror reflecting supra-sensible realities.[35]

Moreover, there has been throughout Islamic history an intimate connection between gnosis, or the metaphysical dimension of the tradition, and the study of nature as we also find it in Chinese Taoism. So many of the Muslim scientists like Avicenna, Quṭb al-Dīn Shīrāzī and Bahā' al-Dīn 'Āmilī were either practising Sufis or were intellectually attached to the illuminationist-gnostic schools. In Islam as in China observation of nature and even experimentation stood for the most part on the side of the gnostic and mystical element of the tradition while logic and rationalistic thought usually remained aloof from the actual observation of nature. There never occurred the alignment found in seventeenth-century science, namely a wedding of rationalism and empiricism which however was now totally divorced from the one experiment that was central for the men of old, namely experiment with oneself through a spiritual discipline.[36]

In Islam the inseparable link between man and nature, and also between the sciences of nature and religion, is to be found in the Quran itself, the Divine Book which is the Logos or the Word of God. As such it is both the source of the revelation which is the basis of religion and that macrocosmic revelation which is the

Universe. It is both the recorded Quran (*al-Qur'ān al-tadwīnī*) and the 'Quran of creation' (*al-Qur'ān al-takwīnī*) which contains the "ideas" or archetypes of all things. That is why the term used to signify the verses of the Quran or *āyah* also means events occurring within the souls of men and phenomena in the world of nature.[37]

Revelation to men is inseparable from the cosmic revelation which is also a book of God. Yet the intimate knowledge of nature depends upon the knowledge of the inner meaning of the sacred text or hermeneutic interpretation (*ta'wīl*).[38] The key to the inner meaning of things lies in *ta'wīl*, in penetrating from the outward (*ẓāhir*) to the inward (*bāṭin*) meaning of the Quran, a process which is the very opposite of the higher criticism of today. The search for the roots of knowledge in the esoteric meaning of a sacred text is also found in Philo and certain medieval Christian authors such as Hugo of St Victor and Joachim of Flora. Outside the mainstream of Christian orthodoxy it is found after the Renaissance in such writers as Swedenborg. It is precisely this tradition, however, that comes to an end in the West with the obliteration of metaphysical doctrines leaving the sacred text opaque and unable to answer the questions posed by the natural sciences. Left only with the external meaning of the Holy Scripture later Christian theologians could find no other refuge than a fundamentalism whose pathetic flight before nineteenth century science is still fresh in the memory.

By refusing to separate man and nature completely, Islam has preserved an integral view of the Universe and sees in the arteries of the cosmic and natural order the flow of divine grace or *barakah*. Man seeks the transcendent and the supernatural, but not against the background of a profane nature that is opposed to grace and the supernatural. From the bosom of nature man seeks to transcend nature and nature herself can be an aid in this process provided man can learn to contemplate it, not as an independent domain of reality but as a mirror reflecting a higher reality, a vast panorama of symbols which speak to man and have meaning for him.[39]

The purpose of man's appearance in this world is, according to Islam, in order to gain total knowledge of things, to become the Universal Man (*al-insān al-kāmil*), the mirror reflecting all the Divine Names and Qualities.[40] Before his fall man was in the Edenic state, the Primordial Man (*al-insān al-qadīm*); after his fall he lost this state, but by virtue of finding himself as the central being in a Universe which he can know completely, he can surpass his state before the fall to become the Universal Man. Therefore, if he takes advantage of the opportunity life has afforded him, with the help of the cosmos he can leave it with more than he had before his fall.

The purpose and aim of creation is in fact for God to come 'to know' Himself through His perfect instrument of knowledge that is the Universal Man. Man therefore occupies a particular position in this world. He is at the axis and centre of the cosmic *milieu* at once the master and custodian of nature. By being taught the names of all things he gains domination over them, but he is given this power only because he is the vicegerent (*khalīfah*) of God on earth and the instrument of His Will. Man is given the right to dominate over nature only by virtue of his theomorphic make-up, not as a rebel against heaven.

In fact man is the channel of grace for nature; through his active participation in the spiritual world he casts light into the world of nature. He is the mouth through which nature breathes and lives. Because of the intimate connection between man and nature, the inner state of man is reflected in the external order.[41] Were there to be no more contemplatives and saints, nature would become deprived of the light that illuminates it and the air which keeps it alive. It explains why, when man's inner being has turned to darkness and chaos, nature is also turned from harmony and beauty to disequilibrium and disorder.[42] Man sees in nature what he is himself and penetrates into the inner meaning of nature only on the condition of being able to delve into the inner depths of his own being and to cease to lie merely on the periphery of his being. Men who live only on the surface of their being can study nature as something to be manipulated

and dominated. But only he who has turned toward the inward dimension of his being can see nature as a symbol, as a transparent reality and come to know and understand it in the real sense.

In Islam, because of this very conception of man and nature, nature has never been considered as profane nor have the sciences of nature considered as *natura naturata* ever been studied without the remembrance of *natura naturans*. The presence of metaphysical doctrine and the hierarchy of knowledge enabled Islam to develop many sciences which exerted the greatest influence on Western science without these sciences disrupting the Islamic intellectual edifice. A man like Avicenna could be a physician and Peripatetic philosopher and yet expound his 'Oriental philosophy' which sought knowledge through illumination.[43] A Naṣīr al-Dīn Ṭūsī could be the leading mathematician and astronomer of his day, the reviver of Peripatetic philosophy, the author of the best known work on Shi'ite theology and an outstanding treatise on Sufism. His student Quṭb al-Dīn Shīrāzī could be the first person to explain correctly the cause of the rainbow and write the most celebrated commentary upon the *Theosophy of the Orient of Light* (*Hikmat al-ishrāq*) of Suhrawardī. The examples could be multiplied but these suffice to demonstrate the principle of the hierarchy of knowledge and the presence of a metaphysical dimension within Islam which satisfied the intellectual needs of men so that they never sought the satisfaction of their thirst for causality outside the religion as was to happen in the West during the Renaissance.

In fact it might be said that the main reason why modern science never arose in China or Islam is precisely because of the presence of metaphysical doctrine and a traditional religious structure which refused to make a profane thing of nature. Neither the 'Oriental bureaucratism' of Needham[44] nor any other social and economic explanation suffices to explain why the scientific revolution as seen in the West did not develop elsewhere. The most basic reason is that neither in Islam, nor India nor the Far East was the substance and stuff of nature so depleted of a sacramental and spiritual character, nor was the intellectual

dimension of these traditions so enfeebled as to enable a purely secular science of nature and a secular philosophy to develop outside the matrix of the traditional intellectual orthodoxy.[45] Islam, which resembles Christianity in so many ways, is a perfect example of this truth, and the fact that modern science did not develop in its bosom is not the sign of decadence as some have claimed but of the refusal of Islam to consider any form of knowledge as purely secular and divorced from what it considers as the ultimate goal of human existence.

Before passing to the Christian tradition it is impossible not to mention briefly the case of the American Indians whose view concerning nature is a most precious message for the modern world. The Indians, especially of the Plains, did not develop an articulated metaphysics, but nevertheless they possess the profoundest metaphysical doctrines expressed in the most concrete and primordial symbols.[46] The Indian, who is something of a primordial monotheist, saw in virgin nature, in forests, trees, streams and the sky, in birds and buffalos, direct symbols of the spiritual world. With the strong symbolist spirit with which he was endowed he saw everywhere images of celestial realities. For him, as for other nomads, nature was sacred and there was a definite disdain of the artificialities of sedentary life. Virgin nature was for the Indian the cathedral in which he lived and worshipped. His desperate struggle against the white man was not only for a living space but also for a sanctuary. His civilization was so different from, and diametrically opposed to, that of the modern world that after living for thousands of years in nature, he left it in such a condition that today that very segment of nature must be turned into a national park in order to prevent it from becoming spoiled. When one sees the tracks of the Indian high in the Rocky Mountains, tracks which he crossed for millenia without disturbing the ambiance about him, one feels so strongly that the Indian was one who really walked gently upon the earth. For this, if for no other reason, the heritage of the American Indian contains a most precious message for the modern world.

If a day were to come when Christianity, rather than trying to convert the followers of Oriental religions, should also try to understand them and enter into an intellectual dialogue with them[47] then Oriental metaphysics, which is also in its essence the *philosophia perennis*, as well as the cosmological doctrines of the Oriental traditions (which could also be referred to as *cosmologia perennis*),[48] could act as a cause and occasion for recollection of elements forgotten in the Christian tradition. They could aid in restoring a spiritual vision of nature that would be able to provide the background for the sciences. Also, if we review the history of Christianity in the light of Oriental metaphysical and cosmological principles, some of which have been mentioned above, we shall discover a tradition of the study of nature which can act as the background for a new theological appraisal of the Christian vision of nature. It is in the light of these doctrines that we turn to a few representatives of this tradition in the history of Christianity.

In the Old Testament there are certain references to the participation of nature in the religious view of life, such as in the vision of Hosea in which God entered into covenant with beasts and plants in order to secure peace, or when Noah was ordered to preserve all animals whether they were clean or unclean, that is, irrespective of their usefulness or relation to man.[49] Likewise, virgin nature or wilderness is conceived as a place of trial and punishment as well as refuge and contemplation or as the reflection of paradise. This vision and tradition of the contemplative view of nature was to survive later in Judaism in both the Kabbalistic and Hassidim schools. As for the New Testament the death and resurrection of Christ is accompanied by a withering and rejuvenation of nature pointing to the cosmic character of Christ. St Paul also believed that all creation shares in the redemption.

In the West, however, the early Church as a reaction to paganism gradually became withdrawn and totally distinct from the world about it. Even the terms paradise and wilderness in their positive sense became connected solely with the Church

and later with the monastery and the university as distinct institutions.[50] Gradually in the Western Church the selective character of salvation became more emphasized, and virgin nature and wilderness became interpreted as a domain of warfare and combat rather than of peace and contemplation. Even the geographic expansion of the Renaissance and the conquest of the New World were accomplished with this motif in mind.[51] In the Eastern Church, however, the contemplative view of nature was emphasized and made much more central. Nature was considered as a support for the spiritual life and the belief was held that all nature shares in salvation (*apokatastasis pantōn*) and the Universe is renovated and reconstructed by Christ in his second coming.

Among the early fathers also the Greek fathers like Origen, Irenaeus, Maximus the Confessor and Gregory of Nyssa who were so influential in the formation of Orthodox theology developed a theology of nature. Origen and Irenaeus are, particularly important since they applied the Logos doctrine not only to man and his religion but also to the whole of nature and all creatures. Their followers likewise showed much sympathy for a spiritual vision of nature.[52] The Latin fathers, however, did not for the most part show great interest in nature to the extent that the most famous among them, St Augustine, in the *City of God* considers nature as fallen and not yet redeemed.[53]

With the spread of Christianity into northern Europe, new ethnic groups entered the fold of Christianity who, far from being infected with the paganism of the Mediterranean world possessed a keen insight into the spiritual value of nature. Among Anglo-Saxons and Celts there was a strong awareness of the harmony between man and nature.[54] The Celtic monks sought after the *theoria* or vision of the cosmos as a divine theophany and went on pilgrimages in the hope of discovering harmony with God's creation. Some of the best nature poetry in the West is a product of their spiritual quest.[55]

It remained for a northerner, Johannes Scotus Erigena, to give the first complete metaphysical formulation of nature in the Latin Middle Ages. The ninth-century Irish scholar, who wrote

commentaries on the Bible, in which he sought to reveal its inner meaning, as well as on Dionysus the Areopagite, is best known for his *De divisione naturae* dealing with God, creation and the return of creation to God. Some theologians and philosophers, who do not understand a metaphysical and cosmological doctrine of nature, are apt to accuse any doctrine of this kind of being pantheistic, but Erigena was fully aware of the Transcendent Origin of the Universe. Yet, for him all things in the Universe come from God and are created through Christ.[56] The first opening phrase of the Scriptures 'In the beginning God made the heaven and the earth' in fact means for Erigena the creation of all the primordial causes in Christ.[57]

Erigena, following Gregory of Nyssa, held a conception of matter according to which matter rather than being an opaque quantity is a combination of incorporeal qualities,[58] while form is all that gives existence to corporeal bodies and relates this domain to higher planes of existence. In the corporeal world as well as through all realms of creation the Trinity is present; the *essentia* of the Father as the source of existence, the *sapientia* of the Son as the source of wisdom and the *vita* of the Spirit as the life of all things in the Universe. And so man also has a triune nature comprised of the intellect (*nous*), reason (*logos*) and sense (*dianoia*).

Man stands in fact between the spiritual and material creations and partakes of the nature of both. In him the whole creation is contained in an essential rather than in a material or substantial sense.[59] Man is created in the image of God, yet as an animal, so that from one side the spiritual world is reflected in him and from the other the animal world. His destiny is inextricably tied to both the spiritual and natural worlds. That is why the *apokatastasis* or the final restoration means the passage of spiritualized nature to God and the restoration of all things including animals and trees.

In the light of this spiritual conception of nature, Erigena possessed a strong symbolic vision of things. Even in his astronomy, which in certain ways resembles the scheme of Tycho

Brahe, he gives a more eminent place to the Sun because of the symbolic nature of the Sun as the source of all existence and vitality, as the universal efficient cause in the cycle of the world.[60] He also expounds a doctrine of the states of being, and the interrelation between levels in the hierarchy of existence. This interrelation very much resembles the universal metaphysical doctrines of the Orient.[61]

Another eminent example of the Christian contemplative vision of nature is Saint Hildegard of Bingen, the visionary whose exposition of the structure of the cosmos is combined with remarkable miniatures going back to Saint Hildegard herself.[62] In her works the wedding of science and art so characteristic of the Middle Ages can be clearly seen. We observe a Christian cosmography and cosmology expounded through the means of the sacred art of Christianity,[63] expressed in symbolic colours and forms which could be conveyed only through the medium of traditional art.

Saint Hildegard had a vision of the Universe, similar to that of Hugo of Saint Victor in which nature is totally in the domain of the Spirit manifesting itself in all products of nature. In her vision she is addressed by the Spirit in these remarkable words:

'I am that supreme and fiery force that sends forth all the sparks of life. Death hath no part in me, yet do I allot it, wherefore I am girt about with wisdom as with wings. I am that living and fiery essence of the divine substance that flows in the beauty of the fields. I shine in the water, I burn in the sun and the moon and the stars. Mine is that mysterious force of the invisible wind: I sustain the breath of all living. I breathe in the verdure, and in the flowers, and when the waters flow like living things, it is I. I found those columns that support the whole earth . . . I am the force that lies hid in the winds, from me they take their source, and as a man may move because he breathes, so doth a fire burn but by my blast. All these live because I am in them and am of their life. I am wisdom. Mine is the blast of the thundered word by which all things were made. I permeate all things that they may

not die. I am life.'[64] Here is a vision of nature still sacred and spiritual before it became profane.

If Erigena expounded a metaphysical doctrine of nature and Saint Hildegard a vision of a Christian cosmos expressed in terms of Christian iconography and symbolism, Roger Bacon was, as well as a mystic, a scientist and experimentor. He has often been called a forerunner of modern science and along with Robert Grosseteste the founder of the experimental method.[65] What is usually forgotten is that Roger Bacon was also an illuminationist and Pythagorean who tried to cultivate the sciences of nature in the matrix of supernatural knowledge, and conceived of mathematics itself in a symbolic sense. He experimented, not only with nature but also with the Holy Spirit within himself.[66] He possessed a vision of the hierarchy of knowledge much like that of the Muslim Avicenna whom he so greatly admired. He cultivated the mathematical and natural sciences within the fold of Christian intellectuality. It is unfortunate that his example was not followed. Had he had successors, perhaps the Renaissance and seventeenth-century development of science wholly outside the fold of Christianity would never have come about, and the schism in Western civilization between science and religion would have been prevented.[67] The fact that after Roger Bacon, what came to be known later as science was cultivated by rationalist and nominalist theologians rather than 'illuminationists' and esoterists like Bacon, could only point to an inevitable divorce between science and religion.

We also find in the figure of St Francis of Assisi a most startling reminder of the possibility of a reverential attitude towards nature within the aura of the Christian saintly life. His life among the birds and beasts whom he addressed was a concrete example of the Christian belief that through holiness man can gain a relationship with nature. This is a return to conditions before the fall with its ensuing disruption of harmony between man and nature.[68]

In the *Canticle of the Sun* and in many other sermons St Francis displays a disinterested contemplative view of nature

outside all human utility. In his conversation with animals and even the elements, such as fire which he addressed when he was being cauterized, he illustrates the inner relation and intimacy that the saint gains with nature by virtue of his becoming identified with the Spirit that breathes within it.

Likewise, in Dante we see an eminent example of the integration of all knowledge, scientific, philosophical and theological into the total structure of Christianity. A synthesis whose highest meaning is revealed only to those who can unravel the anagogical meaning hidden within the *Divine Comedy*. The cosmos is a Christian one, the seven liberal arts correspond to so many levels of existence which the soul must realize, and the flight from the summit of the mount of Purgatory symbolizes the departure of the soul from the pinnacle of human perfection or the 'Lesser Mysteries', to states that are veritably transhuman and belong to the 'Greater Mysteries.'[69] The *Divine Comedy* contains in this cathedral of Christian intellectuality metaphysical and cosmological doctrines of lasting value not because of the symbolism of the Aristotelian astronomy which it employs, but because of the delineation of the structure of reality both externally and within the souls of men. This remains true independently of the symbolism used to express it. One must actually traverse the cosmos, or the levels of existence, to realize that the force that pervades all things is the 'love that moves the sun and the stars'.

Contemporary with Dante and following him during the next few centuries are the Christian alchemists, who integrated the Hermetic-alchemical doctrines of Alexandrian origin as later developed by Muslims into the perspective of Christianity. With men like Nicola Flamel who was a saintly and devout Christian and Basil Valentine, the attachment of alchemical doctrines to Christianity could no longer be denied. In the writings of these alchemists one finds, most significantly a vast doctrine of nature infused with the Christian spirit.

Alchemy is neither a premature chemistry nor a psychology in the modern sense, although both of these are to be found in alchemical writings.[70] Alchemy is a symbolic science of natural

forms based on the correspondence between different planes of reality and making use of mineral and metal symbolism to expound a spiritual science of the soul. For alchemy, nature is sacred, and the alchemist is the guardian of nature considered as a theophany and reflection of spiritual realities.[71] A purely profane chemistry could come into being only when the substances of alchemy became completely emptied of their sacred quality. For this very reason, a re-discovery of the alchemical view of nature, without in any way denying the chemical sciences which deal with substances from another point of view, could reinstate the spiritual and symbolic character of the forms, colours and processes that man encounters throughout his life in the corporeal world.

Although after the Middle Ages the Christian tradition of the study of nature based on a metaphysical doctrine is more difficult to observe, it nevertheless continued until the nineteenth century. Men like John Ray and other Christian natural historians still went into the fields searching for the vestiges of God, the *vestigio Dei.* In Germany, the alchemist and theosopher, Jacob Böhme, one of the last Christian gnostics, continued the alchemical tradition of the study of nature. He spoke of the inner forces of nature, and of primordial nature in its pristine purity, still present here and now but which men cannot see because of turmoil and darkness within their souls that make them absent from it.[72] He invited men to seek to regain a vision of this pure and primordial nature. After him, Goethe in his *Farbenlehre* was to continue the interest in symbolism of colours and harmony within nature, while the followers of *Naturphilosophie* fought a losing battle against the mechanistic conception of nature. But by now even this battle was no longer fought from the camp of official Christianity.

The long tradition of the spiritual vision of nature, with the metaphysical doctrines upon which it is based, must again be brought to life within Christianity if the encounter of man and nature is not to result in complete disaster. Theologians and philosophers have been for the most part responsible, or at least

have contributed during the past few centuries to making nature profane, thus setting the stage for its becoming profaned through the industrial revolution and the unending applications of modern sciences. They are thus responsible also for reinstating a more wholesome and integral attitude toward nature. Too many modern religious thinkers and theologians have put aside the question of nature and considered man's salvation with a total disregard for the rest of God's creation. In the present situation, however, human existence on this earth, not to mention man's ultimate salvation, has become a precarious matter. Because of this callous disregard for the rights of nature and other living things, it is high time for those who are really concerned with the state of man to turn to this long tradition of the study of nature within Christianity and to seek to restore the metaphysical doctrines of Christianity with the help of Oriental metaphysics. Only the revival of a spiritual conception of nature that is based on intellectual and metaphysical doctrines can hope to neutralize the havoc brought about by the applications of modern science and integrate this science itself into a more universal perspective.

NOTES TO CHAPTER III

1. 'A metaphysical doctrine is the incarnation in the mind of a universal truth. A philosophical system is a rational attempt to resolve certain questions which we put to ourselves.' See F. Schuon, *Spiritual Perspectives and Human Facts*, p. 11.

2. On Oriental metaphysics see R. Guénon, *La Métaphysique orientale*, Paris, 1951.

3. L. Giles, *The Sayings of Lao Tzŭ*, London, 1950, p. 22. Concerning Chinese metaphysical doctrines in general see Matgioi, *La Voie métaphysique*, Paris, 1956; and M. Granet, *La Pensée chinoise*, Paris, 1934.

4. *The Sacred Books of China, The Texts of Taoism* (trans. J. Legge), vol. I, New York, 1962, pp. 315–16.

5. J. Needham, *Science and Civilization in China*, vol. II, Cambridge, 1956, p. 50. Needham interprets this saying as proof of belief in scientific naturalism

and even makes a comparison with Lucretius. But there is a world of difference between the Hellenistic – Roman 'naturalism' and 'naturism' of other traditions in which the substance of nature has not become profane but acts as a means of conveying grace.

6. *The Sayings of Lao Tzŭ*, p. 23.

7. Needham, *op. cit.*, pp. 36 ff.

8. *The Sacred Books of China, The Texts of Taoism*, Part I, p. 342.

9. Chuang-Tzu referring to the sages writes: '(Such men) by their stillness become sages; and by their movement, kings. Doing nothing, they are honoured; in their plain simplicity, no one in the world can strive with them (for the palm of) excellence. The clear understanding of the virtue of Heaven and Earth is what is called "The Great Root", and "The Great Origin";—they who have it are in harmony with Heaven, and so they produce all equable arrangements in the world;—they are those who are in harmony with men.' *Ibid.*, p. 332.

10. Quoted in Fung Yu-Lan, *A History of Chinese Philosophy* (trans. D. Bodde), vol. I, Princeton, 1952, p. 224.

11. The Sayings of *Chuang Chou* (trans. J. Ware), New York, 1963, p. 88.

12. See Needham, *op. cit.*, pp. 49 f.

13. *Ibid.*, p. 51.

14. *The Sacred Books of China; The Texts of Taoism*, Part I, pp. 297–8.

15. This point has been emphasized in several works by Needham: 'Embodied therefore in the common present-day name for a Taoist temple [kuan] is the ancient significance of the observation of Nature, and since in their beginnings magic, divination and science were inseparable, we cannot be surprised that it is among the Taoists that we have to look for most of the roots of Chinese scientific thought.' 'The Pattern of Nature-Mysticism and Empiricism in the Philosophy of Science, Third Century B.C. China, Tenth Century A.D. Arabia, and Seventeenth Century A.D. Europe, in *Science, Medicine and History, Essays in Honor of Charles Singer* (ed. E. Ashworth Underwood), London, 1953, p. 361.

16. 'In Asia, Shamanism properly so-called is met with not only in Siberia, but also in Tibet (in the form of Bön-po) and in Mongolia, Manchuria and Korea. The pre-Buddhist Chinese tradition, with its Confucian and Taoist branches, is attached to the same traditional family, and the same applies to Japan, where Shamanism has given rise to the specifically Japanese *Shinto* tradition. Characteristic of all these doctrines is a complementary opposition of Heaven and Earth, and a cult of Nature . . .' Schuon, *Light on the Ancient Worlds*, p. 72.

17. This in fact is the way that incomparable scholar of Hinduism and of Oriental metaphysics and art in general, A. K. Coomaraswamy, translated *māya*.

18. Of the immense number of works on Hinduism in the European languages very few have understood the proper Hindu point of view and expressed the view of the tradition itself. As far as the metaphysical doctrines of Hinduism and the structure of this tradition is concerned see R. Guénon, *Introduction to the Study of the Hindu Doctrines* (trans. M. Pallis), London, 1945; R. Guénon, *Man and His Becoming, according to the Vedanta* (trans. R. Nicholson), London, 1945; F. Schuon, *The Language of the Self*; and the many works of A. K. Coomaraswamy especially *Hinduism and Buddhism*, New York (n.d.). See also the lucid expositions of M. Eliade and H. Zimmer.

19. There are of course exceptions as those in the seventeenth century who spoke of the atomism of Moses and related the atomistic view to the Hebrew prophet himself.

20. 'The bondage of the world is due to false knowledge which consists in thinking as my own self that which is not myself, namely, body senses, manas, feelings and knowledge; when once the true knowledge of the six padārthas, and as Nyāya says, of the proofs, the objects of knowledge, and of the other logical categories of inference is attained, fasle knowledge is destroyed.' S. Dasgupta, *A History of Indian Philosophy*, vol. I, Cambridge, 1922, p. 365.

21. *Padārthadharmasangraha* of Praçastapāda (trans. M. G. Jha), Allahabad, 1916, p. 13.
The same text asserts: 'Here also the declaration that the knowledge of similarity etc. is the means of highest beatitude implies that such beatitude is brought about by a true knowledge of the categories themselves; as there could be no knowledge of the said similarity etc. independently of the categories.' p. 15.

22. *The Sacred Books of the Hindus* (ed. B. D. Basu), vol. VI, *The Vaiśeṣika Sūtras of Kaṇādā* (trans. Nandalal Sinha), Allahabad, 1923, p. 2.

23. 'From the injurious effect of the threefold kinds of pain (arises) a desire to know the means of removing it (pain). If, from the visible (means of removing it), this (desire) should seem to be superfluous, it is not so, for these are neither absolutely complete nor abiding.' *The Sankhya Karika of Iswar Krishna* (trans. by J. Davies), Calcutta, 1957, p. 6.
We have made some use for this analysis of Sāṃkhya of the Persian work of D. Shayegan, which is now in press (Tehran Univ. Press). Concerning the Sāṃkhya system see A. B. Keith, *Sāṃkhya System*, Calcutta, 1949 and B. N. Seal (Vrajendranātha-Śīla), *Positive Sciences of the Ancient Hindus*, London, 1915.

24. 'The way of eradicating the root of sorrow is thus the practical enquiry of the Sāmkhya philosophy.' Dasgupta, *op. cit.*, p. 265.

25. This four-fold division has a startling resemblance to the *De divisione naturae* of Erigena.

26. 'It is that the soul may be able to contemplate Nature, and to become entirely separated from it, that the union of both is made, as of the halt and the blind, and through that (union) the universe is formed.' *The Sankhya Karika*, p. 34.

27. *Ibid.*, p. 67. The commentary *Tattva-Kaumudi* moreover adds, 'as a qualified servant accomplishes the good of his unqualified master, through purely unselfish motives, without any benefit to himself; so does Nature endowed with the three Attributes, benefit the Spirit without any good in return to herself. Thus the pure unselfishness of Nature's motives is established.' *Tattva-Kaumudī* of Vāchaspati Miśra (trans. G. Jha), Bombay, 1896, p. 104.

28. See Sir J. Woodruffe, *Introduction to Tantra Śastra*, Madras, 1956, pp. 34–5.

29. See M. Eliade, *Yoga, Immortality and Freedom*, New York, 1958, p. 204.

30. See Sir J. Woodruffe, *The World As Power*, Madras, 1957, p. 3.

31. See *Cultural Heritage of India*, vol. I, Calcutta, 1958, pp. 264–2 (chapter on the *Vedangas* by V. M. Apte).

32. Concerning the *Upavedas* see Guénon, *Introduction to the Study of the Hindu Doctrines*, Chapter VIII.

33. On the relation between zero and the centre of the cosmic wheel as well as the void see A. K. Coomaraswamy, '*Kha* and Other Words Denoting "Zero", in Connection with the Metaphysics of Space', *Bull. School of Oriental Studies*, vol. VII, 1934, pp. 487–97.

34. Concerning cosmological doctrines in Islam see S. H. Nasr, *An Introduction to Islamic Cosmological Doctrines*. As for the Islamic sciences themselves see S. H. Nasr, *Science and Civilization in Islam*.

35. See S. H. Nasr, *Islamic Studies*, Beirut, 1966, chapter V, 'The Meaning of nature in Various Intellectual Perspectives in Islam' and Chapter XIII 'Contemplation and Nature in the Perspective of Sufism'.

36. Even in the Renaissance many of the observers and experimenters far from being rationalistic were steeped in the Kabbalistic, Rosicrucian, or other mystical schools of the period as shown so clearly by W. Pagel in his 'Religious Motives in the Medical Biology of the Seventeenth Century'. *Bull. History of Medicine*, 1935, vol. II, no. 2, pp. 97–128; no. 3, pp. 213–31;

no. 4, pp. 265–312. As for the case of Taoism see Needham, *Science and Civilization in China*, vol. II, pp. 91 ff. in addition to his article already cited.

37. In fact the Quran asserts, 'We shall show them our portents upon the horizons and within themselves, until it be manifest unto them that it is the Truth'. (XLI; 53) (Pickthall translation); see Nasr, *An Introduction to Islamic Cosmological Doctrines*, p. 6.

38. See H. Corbin (with the collaboration of S. H. Nasr and O. Yahya), *Histoire de la philosophie islamique*, Paris, 1964, pp. 13–30; and H. Corbin, 'L'intériorisation du sens en herméneutique soufie iranienne', *Eranos Jabrhuch*, XXVI, Zurich, 1958. See also S. H. Nasr, *Ideals and Realities of Islam*, London, 1966, chapter II.

39. 'Nor is there anything which is more than a shadow. Indeed, if a world did not cast down shadows from above, the worlds below it would at once vanish altogether, since each world in creation is no more than a tissue of shadows entirely dependent on the archetypes in the world above. Thus the foremost and truest fact about any form is that it is a symbol, so that when contemplating something in order to be reminded of its higher realities the traveller is considering that thing in its universal aspect which alone explains its existence.' Abu Bakr Siraj Ed-Din, *The Book of Certainty*, London, 1952, p. 50.

40. On this capital doctrine see al-Jīlī, *De l'homme universel* (trans. T. Burckhardt), Lyon, 1953; and T. Burckhardt, *An Introduction to Sufi Doctrine* (trans. D. M. Matheson), Lahore, 1959.

41. 'In considering what the religions teach, it is essential to remember that the outside world is as a reflection of the soul of man . . .' *The Book of Certainty*, p. 32. 'The state of the outer world does not merely correspond to the general state of men's souls; it also in a sense depends on that state, since man himself is the pontiff of the outer world. Thus the corruption of man must necessarily affect the whole, . . .' *Ibid.*, p. 33.

42. A traditional Muslim would see in the bleakness and ugliness of modern industrial society and the ambiance it creates an outward reflection of the darkness within the souls of men who have created this order and who live in it.

43. See H. Corbin, *Avicenna and the Visionary Recital* (trans. W. Trask), New York, 1961; and S. H. Nasr, *Three Muslim Sages*, Chapter I; *An Introduction to Islamic Cosmological Doctrines*, pp. 177 ff.

44. See J. Needham, 'Science and Society in East and West', *Centaurus*; vol. 10, no. 3, 1964, pp. 174–97.

45. By orthodoxy we do not mean simply following the exoteric and literal

interpretation of a religion but to possess the right doctrine (*orthos-doxia*) on both the exoteric and esoteric levels. see F. Schuon, 'Orthodoxy and Intellectuality', in *Language of The Self*, Madras, 1959, pp. 1–14.

46. Concerning the metaphysical teachings of the Indians see J. Brown, *The Sacred Pipe*, Norman, 1953; also F. Schuon, 'The Shamanism of North American Indians', in *Light on the Ancient World*, pp. 72–8.

47. As far as the Islamic world is concerned, with a few rare exceptions, there has been no intellectual contact with Christianity since the Middle Ages.

48. Concerning this perennial cosmology see T. Burckhardt, *Cosmologia Perennis, Kairos*, vol. VI, no. 2, 1964, pp. 18–32.
This is not to say of course that there are no differences in the role and meaning of nature in the various traditions cited. But there is enough agreement on principles and on the metaphysical significance of nature to warrant the use of the term '*cosmologia perennis*'.

49. Williams, *Wilderness and Paradise in Christian Thought*, introduction p. x.

50. 'The corresponding term to *paradise*, in the sense of the Garden of the Great King of the universe, will in due course be applied provisionally to the Church, then more exclusively to the disciplined monastery alone, then to the school growing out of the Church and monastery, namely, the medieval university, and at length in the New World to the theological seminary as the seedbed of missionaries and ministers.' *Ibid.*, p. 6.

51. This development has been fully traced in Williams, *Wilderness and Paradise*.

52. Basil of Neo-Caesarea, an Origenist, writes in his *Hexaemeron*: 'A single blade of grass is enough to occupy your whole mind as you contemplate the skill that produced it', and lectures on nature as the handiwork of God. See Raven, *Natural Religion and Christian Theology I, Science and Religion*, p. 47, where this saying is quoted.

53. For the attitude of St Augustine and the early Church as well as later Christianity toward nature see Raven, *op. cit.*

54. Williams, *Paradise and Wilderness*, pp. 46 ff.

55. 'The pilgrimage of the Irish monk was therefore not merely the restless search of an unsatisfied romantic heart, it was a profound and existential tribute to the realities perceived in the very structure of the world, and of men, and of their being: a sense of ontological and spiritual dialogue between man and creation in which spiritual and bodily realities interweave and interlace themselves like manuscript illuminations in the *Book of Kells* . . . Better perhaps than the Greeks, some of the Celtic monks arrived at the purity of that *theoria physike* which sees God not in the essences or *logoi*

of things, but in a hierophanic cosmos: hence the marvellous vernacular nature poetry of the 6th and 7th century Celtic hermits.' T. Merton, 'From Pilgrimage to Crusade', *Tomorrow*, Spring, 1965, p. 94.

56. Erigena followed the view of Clement of Alexandria who asserted, 'The Son is neither absolutely one, as one; nor yet many, as parts; but one, as all things; for from Him are all things; and He is the circle of all powers collected and united into one'. *Stromata*, IV, 635.9 quoted in H. Bett, *Johannes Scotus Erigena, a Study in Mediaeval Philosophy*, Cambridge, 1925, p. 32.

57. *Ibid.*, p. 40.

58. 'The space of a point is not a space perceived by the senses, but a space understood by the intellect. So a point is incorporeal, and the beginning of lines; a line is incorporeal and the beginning of surfaces; a surface is incorporeal and the beginning of solidity, and solidity is the perfection of matter. Matter, therefore, is really a combination of incorporeal qualities. It is form which constitutes and contains all material bodies, and form is incorporeal.' *Ibid.*, p. 46.

59. 'As man is the middle point between the extremes of spiritual and corporeal, a unique union of soul and body, it is natural to suppose that every creature, visible and invisible, from one extreme to the other, is created in man, and that all are reunited and reconciled in man.' *Ibid.*, p. 58.

60. Concerning his astronomy see E. von Erhardt – Siebold and R. von Erhardt, *The Astronomy of Johannes Scotus Erigena*, Baltimore, 1940 and their *Cosmology in the 'Annotations in Marcianum'*, Baltimore, 1940.

61. See G. B. Burch, *Early Medieval Philosophy*, New York, 1951 and 'The Christian non-dualism of Scotus Erigena', *Philosophical Quarterly*, vol. 26, 1954, pp. 209–14, where some comparisons are made, more from the philosophical than the properly metaphysical point of view.

62. The scientific works of St Hildegard are contained in *Scivias* and *Liber divinorum operum simplicis nominis* whose Luccan ms. contains the beautiful miniatures.

63. There is a close link between cosmology and sacred art in that both select from the multitude of forms certain elements that reflect a particular religious and ethnic genius. See T. Burckhardt, *Von Wesen Heiliger Kunst in den Welt Religionen*, 1955. For Christian cosmography in its relation to art see J. Baltrusaitis, *Cosmographie chrétienne dans l'art du moyen-âge*, Paris, 1939.

64. C. Singer, *Studies in the History and Method of Science*, Oxford, vol. I, 1917, 'The Scientific Views and Visions of Saint Hildegard', p. 33.

At the end of her life St Hildegard wrote. 'And now that I am over seventy years old my spirit according to the will of God soars upward in

vision to the highest heaven and to the farthest stretch of the air and spreads itself among different peoples to regions exceeding far from me here, and thence I can behold the changing clouds and the mutations of all created things; for all these I see not with the outward eye or ear, nor do I create them from the cogitations of my heart . . . but within my spirit, my eyes being open, so that I have never suffered any terror when they left me.' *Ibid.*, p. 55.

65. See A. Crombie, *Robert Grosseteste and the Origins of Experimental Science*, Oxford, 1955.

66. Referring to Roger Bacon A. E. Taylor writes, 'There is at bottom no difference between natural and supernatural knowledge. His serious theory is that all certain knowledge is experimental, but experiment is of two kinds, experiment made on external nature, the source of certainty in natural science, and experimental acquaintance with the work of the Holy Spirit within the soul, the source of the knowledge of heavenly things which culminates in the vision of God.' *European Civilization*, vol. III, London, 1935, p. 827.

67. F. Picanet writes that if the path of R. Bacon had been followed, 'there would have been no room for a Renaissance wholly separated from Catholicism, nor for an open struggle and total rupture between theology, philosophy and science'. Quoted by C. Raven, *Science and Religion*, p. 87.

68. 'Whatever the actual episodes may have been, it is significant that both the saints and the hagiographer felt that only through the recovery of pristine holiness could man help undo the ferocity brought into the world by man's primordial disobedience in the first Paradise.' Williams, *Wilderness and Paradise*, p. 42.

69. See R. Guénon, *L'Esotérisme de Dante*, Paris, n.d.

70. Whatever service the works of C. G. Jung may have rendered to make alchemy better known, they are inadequate in that they limit alchemy to a psychology that is devoid of a transcendent and spiritual origin for the symbols that appear to the human psyche.

71. See Burckhardt, *De Alchemie. Sinn und Weltbild* where examples of Christian alchemists are given; see also M. Eliade, *The Forge and the Crucible*, New York, 1956.

72. Concerning Böhme, see A. Koyré, *La Philosophie de Jacob Boehme*, Paris, 1928; and the section devoted to Böhme in *Hermès*, 3, Winter, 1964–65.