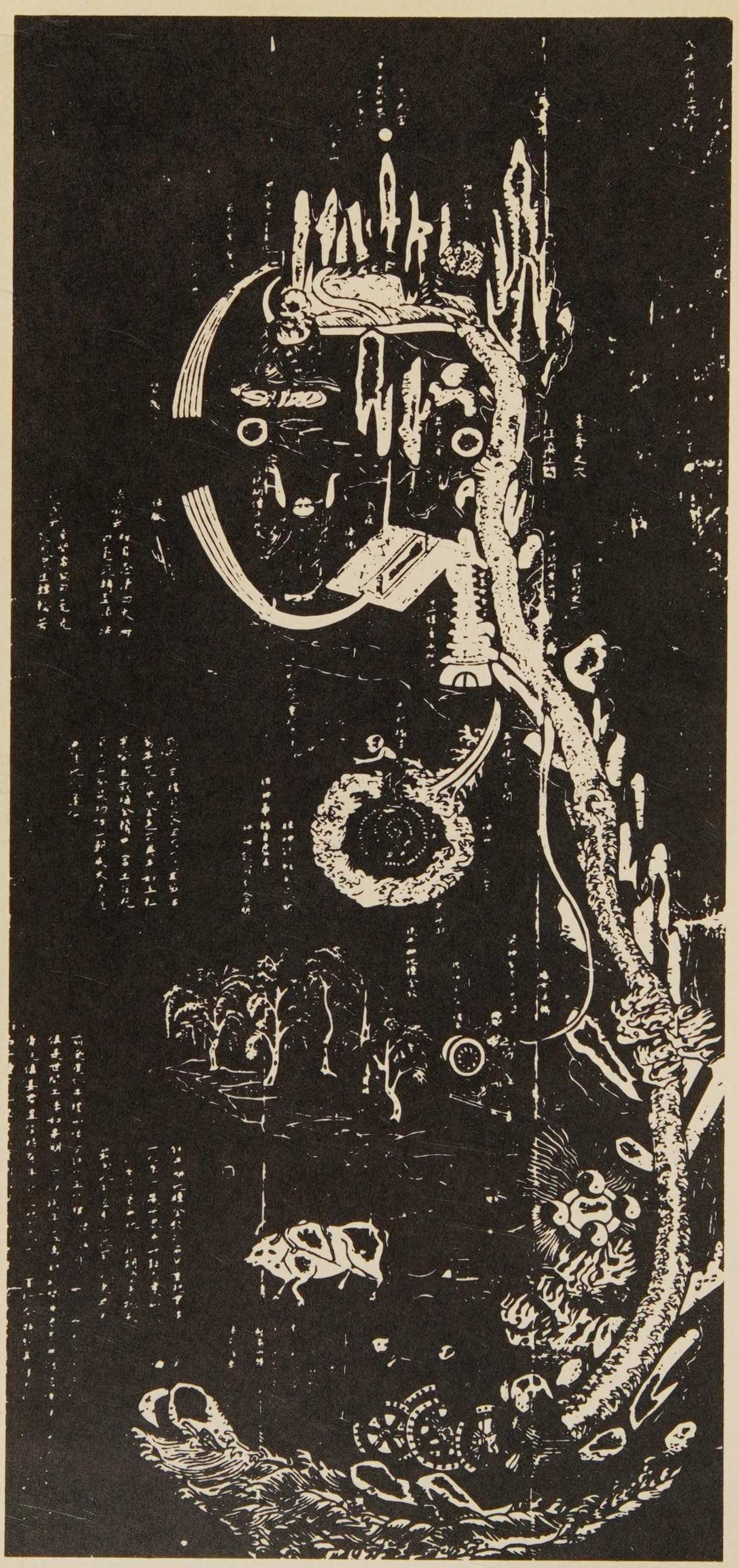
PARABOLA

MYTH AND THE QUEST FOR MEANING



I·N·N·E·R A·L·C·H·E·M·Y

MIRCEA ELIADE JACOB NEEDLEMAN ELÉMIRE ZOLLA



VOLUME III, NO. 3

INNER ALCHEMY

PARABOLA

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Contributing Editors John Loudon, John A. Miles, Jr., Winifred Lambrecht
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Cover: The Green Lion in an alchemical landscape. Drawing by Ted Enik.

Inside Cover: Diagram of the "subtle body" mapping the Inner Alchemy. Ch'ing Dynasty.

FOCUS



In the sixteenth century, there lived in Europe a physician known as Paracelsus. He was also an alchemist, a thinker and a great man. For this issue on Alchemy, PARABOLA *turns Focus over to him.*

Let it be for you a great and high mystery in the light of nature that a thing can completely lose and forfeit its form and shape, only to arise subsequently out of nothing and become something whose potency and virtue is far nobler than what it was in the beginning.

Nature does not produce anything that is perfect in itself; man must bring everything to perfection. This work of bringing things to their perfection is called "alchemy." And he is an alchemist who carries what nature grows for the use of man to its destined end. God created iron but not that which is to be made of it. He enjoined fire, and Vulcan, who is the lord of fire, to do the rest. From this it follows that iron must be cleansed of its dross before it can be forged. This process is alchemy; its founder is the smith Vulcan. What is accomplished by fire is alchemy—whether in the furnace or in the kitchen stove. And he who governs fire is Vulcan, even if he be a cook or a man who tends the stove. Nothing has been created as *ultima materia*—in its final state. Everything is first created in its *prima materia,* its original stuff; whereupon Vulcan comes, and by the art of alchemy develops it into its final substance.

Alchemy is a necessary, indispensable art, and Vulcan is its artist. He who is a Vulcan has mastered his art; he who is not a Vulcan can make no headway in it. But to understand this art, one must above all know that God has created all things; and that he has created something out of nothing. This something is a seed, in which the purpose of its use and function is inherent from the beginning. And since all things

have been created in an unfinished state, nothing is finished, but Vulcan must bring all things to their completion. Things are created and given into our hands, but not in the ultimate form that is proper to them.

For alchemy means: to carry to its end something that has not yet been completed; to obtain the lead from the ore and to transform it into what it is made for. Accordingly, you should understand that alchemy is nothing but the art which makes the impure into the pure through fire. It can separate the useful from the useless, and transmute it into its final substance and its ultimate essence.

Since ancient times philosophy has striven to separate the good from the evil, and the pure from the impure; this is the same as saying that all things die and that only the soul lives eternal. The soul endures while the body decays, and you may recall that correspondingly a seed must rot away if it is to bear fruit. Decay is the beginning of all birth. It transforms shape and essence, the forces and virtue of nature. Decay is the midwife of very great things! It causes many things to rot, that a noble fruit may be born; for it is the reversal, the death and destruction of the original essence of all natural things. It brings about the birth and rebirth of forms a thousand times improved. And this is the highest and greatest *mysterium* of God, the deepest mystery and miracle that He has revealed to mortal man.

The mysteries of the Great and the Little World are distinguished only by the form in which they manifest themselves; for they are only *one* thing, *one* being. Heaven and earth have been created out of nothingness, but they are composed of three things —*mercurius, sulphur,* and *sal.* Of these same three things the planets and all the stars consist; and not only the stars but all bodies that grow and are born from them. And just as the Great World is thus built upon the three primordial substances, so man—the Little World—was composed of the same substances. Thus man, too, is nothing but mercury, sulphur, and salt.

How marvelously man is made and formed if one penetrates into his true nature —and it is a great thing; consider for once, that there is nothing in heaven or in earth that is not also in man. In him is God who is also in Heaven; and all the forces of Heaven operate likewise in man. Where else can Heaven be rediscovered if not in man? Since it acts from us, it must also be in us.

Therefore you should not judge people according to their stature, but honor them all equally. What is in you is in all. Each has what you also have within you; and the poor grows the same plants in his garden as the rich. In man, the ability to practise all crafts and arts is innate, but not all these arts have been brought to the light of day. Those which are to become manifest in him must first be awakened. Everything is prefigured even in the child; it must only be awakened and summoned forth in him. The child is still an uncertain being, and he receives his form according to the potentialities that you awaken in him. If you awaken his ability to make shoes, he will be a shoemaker; and if you summon forth the scholar in him, he will be a scholar. And this can be so because all potentialities are inherent in him; what you awaken in him comes forth from him; the rest remains unawakened, absorbed in sleep.

We are born to be awake, not to be asleep!

Therefore, man, learn and learn, question and question, and do not be ashamed of it.

The earth brings forth all things and holds back nothing, not even the least thing; all the more should man help the gifts that God has sown in him to prosper and thus become a saint, a hymn in His praise. For it is the saints who embody and make manifest what God has put into them. Man should always keep this in mind; he should not fall asleep, but in daily effort should strive for his summer lest it be always winter round him.

— Paracelsus

Paracelsus, *Selected Writings,* ed. Jolande Jacobi, trans. Norbert Guterman. Bollingen Series XXVIII. Copyright 1951 by Princeton University Press. Reprinted by permission.

PARABOLA *is interested in an exchange of ideas and points of view through the active participation of its readers. We welcome your letters and comments on the issues raised in our pages. Please address all correspondence to:*

The Editor, PARABOLA, *150 Fifth Avenue, New York, N.Y. 10011*

Sometimes I feel as though my country is going to the junk heap, and then I receive publications like PARABOLA and realize my people and my country are really very healthy.

I am a Sephardic Jew who did a lot of her growing up near and with Native Americans and I am devoted to the marvelous sense that our various American and worldwide philosophies have made.

I am trained in the sciences and in the field of anger and violence management. I was brought up on oral history and myths and get very worried about Americans who were handed no myths. It is very easy to go crazy just being fed facts. I found a terrible feeling of loss when I worked with pregnant teenagers, and with families that had trouble with violence—especially among women. There were the American myths portrayed by TV, but there was no oral history or family myths that tied the people to the earth, or to the past or the future. My fellow workers thought I was crazy asking for such things. However, I taught *Headstart* ten years ago. We had two sites with children from the same area who were generally matched in other ways. On one site children learned and were enthusiastic about life no matter how difficult their pasts were; at the other site we tried everything and the children fell behind. On making a study we found that on the site where children looked at life and learning enthusiastically, we had a kind of freak occurrence: all the children on this site had a closeness to either a grandparent or another older person. On the other site not one of the children was exposed to older members of his family. It was this unscientific study that convinced me that oral history and myth were among the most important and precious parts of being and surviving even in technical times. All the children on the first site came to us at three years of age with at least five songs and about eight stories from elders. I have five children of my own and I know parents rarely have the time to pass on these myths and songs—they must come from elder outsiders.

These are some of the reasons that I feel that PARABOLA is essential. Myths are not fiction, they are the foundations of sanity and culture.

—Tinnia Zitter
Huntington Beach, CA



Thank you for providing us with PARABOLA. For two years now we have been reading and enjoying it. I feel we have common interests with you and your readers and therefore I am taking the opportunity to write to you about two matters that concern me and my friends in Yodfat.

Yodfat is a cooperative settlement in the Galilee, Israel, founded eighteen years ago by a group of young people dedicated to a quest for meaning. Today it is a mature community, purely agricultural.

We are now in a transition period, where we feel that people who are interested in living in an agricultural community in Israel, and who feel that the center of their being is a quest for meaning (of which PARABOLA provides a beautiful illustration), can be of great help to us and can equally, we hope, benefit by sharing our experience.

Personally, being a physician, presently a resident in Family Medicine and hoping to integrate unorthodox healing arts into my practice, I am asking for your assistance in providing me and other members of the community who share these aims with information about sources of teaching in Health, Healing or Medicine which are presently considered "non-orthodox." Names, places, books, films or cassettes—any information from your readers will be greatly appreciated.

—Shmuel Reis, Yodfat
Post Bikat Beit Hakerem
Carmiel 25280, Israel

In the printing of my review of William Irwin Thompson's *Darkness and Scattered Light* in the last issue (Volume III, Number 2), the first two sentences of the third paragraph were mistakenly conflated into one. The text should have read: "In the course of his exposition, Thompson boldly shuttles back and forth between science and myth, past and future, history and religion —the seeming master of all he surveys. I find him especially interesting on the relations of the ego and the Self (or 'the daimon,' as he sometimes puts it), and here he clearly speaks from deep experience."

I might also take this opportunity to clarify my observation, elsewhere in the review, that Lindisfarne is "a struggling experiment with decidedly mixed results to date." Basically, I meant that while it has had success as a center for alternative education—organizing conferences, offering courses, publishing books—it has not succeeded in providing a viable model of the metaindustrial village that Thompson sees as the most promising form of human community in the future.

—John Loudon
New York, N.Y.



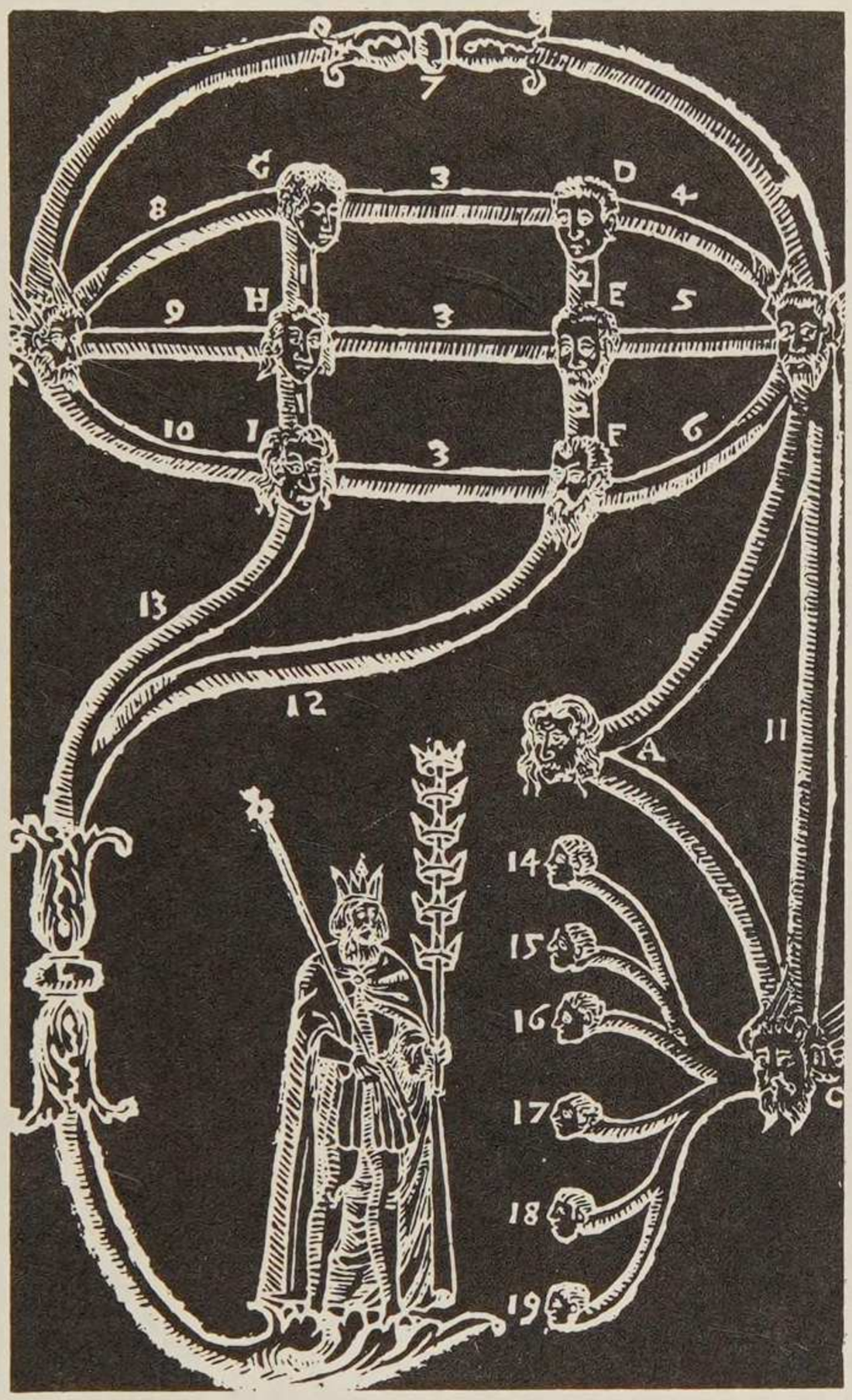
THE MYTH OF ALCHEMY

by Mircea Eliade

The recovery of the original meaning and intent of alchemy must in large measure be seen as the result of contemporary historiographical insight. Until recently, alchemy was regarded either as proto-chemistry, i.e., an embryonic, naive, or prescientific discipline, or conversely as a mass of superstitious rubbish that was culturally irrelevant. The first historians of science investigated alchemical texts for the possible chemical observations and discoveries they might have contained. But such an evaluation was tantamount to judging—and classifying— great poetic creations on the basis of their historical accuracy, their moral teachings, or their philosophical implications. That the alchemists *did* contribute to the progress of the natural sciences is certainly true. But they did this indirectly and only as a consequence of their concern with mineral substances and living matter. For they were "experimenters"—not abstract thinkers or erudite scholastics. Their inclination to "experiment," however, was not limited to the natural realm. As I tried to show in my book, *The Forge and the Crucible*,[1] the alchemists' experiments with mineral or vegetal substances pursued a more ambitious goal: namely, to change the alchemist's own mode of being.

The recent modification of historiographical perspective constitutes in itself a significant cultural phenomenon. But the analysis of this subject would take us too far from the topic. Suffice it to say that this new historiographical approach can be perceived—to cite only a few examples—in the researches of Joseph Needham and Nathan Sivin on Chinese alchemy;[2] of Paul Kraus and Henry Corbin on Islamic alchemy;[3] of H. J. Shepard on Hellenistic alchemy;[4] and of Walter Pagel and Allen G. Debus on Renaissance and post-Renaissance alchemy.[5] I would also note such stimulating recent books as: *John Dee: The World of an Elizabethan Magus* (1972) by Peter J. French; *The Rosicrucian Enlightenment* (1972) by Frances Yates; *Rudolph II and his World: A Study of Intellectual History* (1975) by R. J. Evans; and *The Foundations of Newton's Alchemy* (1975) by Betty Teeter Dobbs.

To situate alchemy correctly in its original context, one must keep in mind the fol-



Chaos

lowing fact: in every culture that we find alchemy, it is always intimately related to an esoteric or "mystical" tradition: in China with Taoism, in India with Yoga and Tantrism, in Hellenistic Egypt with Gnosis, in Islamic countries with Hermetic and esoteric mystical schools, in the Western Middle Ages and Renaissance with Hermetism, Christian and sectarian mysticism and Cabala. In brief, all alchemists proclaim their art to be an esoteric technique, pursuing a goal similar or comparable to that of the major esoteric and "mystical" traditions.

I shall examine shortly the specific characteristics of some alchemical practices. For the moment, I would like to emphasize the importance of *secrecy,* that is the esoteric transmission of alchemical doctrines and techniques. The oldest Hellenistic text, *Physikē kai Mystikē* (probably dating to the second century B.C.) relates how this book was discovered after having been hidden in a column of an Egyptian temple. In the prologue of one of the classical Indian alchemical treatises, *Rasārnava,* the Goddess asks Shiva for the secret of becoming a *jīvanmukta,* i.e., a "liberated in life." Shiva tells her that this secret is seldom known, even among the gods. Also, the most famous Chinese alchemist, Ko Hung (260-340 A.D.) insists on the importance of secrecy. He states that "secrecy is thrown over the efficacious recipes...The substances referred to are commonplaces which nevertheless cannot be identified without knowledge of the code concerned."[6] The deliberate incomprehensibility of alchemical texts for the non-initiate becomes almost a cliché in the Western post-Renaissance alchemical literature. An author quoted by the *Rosarium Philosophorum* declares that: "Only he who knows how to make the Philosopher's Stone understands the words which relate to it."[7] And the *Rosarium* warns the reader that these questions must be transmitted "mystically," just as poetry uses fables and parables. In short, we are confronted with a "secret language." According to some authorities, there was even an "oath not to divulge the secret in books."[8]

Now, as is well known, secrecy was a general rule with almost all techniques and

sciences in their first stages—from pottery, mining and metallurgy to medicine and mathematics. The secret transmission of methods, tools and recipes is abundantly documented in China and in India, as well as in the ancient Near East and Greece. Even so late an author as Galen warns one of his disciples that the medical knowledge which he communicates must be received as an initiate receives the *tēlētē* in the Eleusinian mysteries.[9] As a matter of fact, being introduced into the secrets of a craft, of a technique, or of a science was tantamount to undergoing an initiation. But in the case of Asiatic and Western alchemy, the communication of the secrets was part and parcel of a broader mythic scenario, which can be described as follows. At the beginning of time these secrets were communicated to certain fabulous personages, but were afterwards "sealed," that is to say scrupulously hidden. This long period of occultation has come to an end only recently, and the primordial revelation again has become accessible to a few select adepts and only through a specific initiation.

The mythological theme of a primeval revelation, concealed from time immemorial and only lately unveiled or rediscovered, was much diffused in the last four centuries before the Christian era. We find this mythological theme in India as well as in the Near East, in Egypt, and in the Mediterranean area. A whole "literature of revelation" flourishes in Hellenistic times, from Plato's pupil, Heraclides Ponticus (390-310 B.C.) to the innumerable oracular books, the Jewish apocalyptic and pseudepigraphic treatises, and the *Corpus Hermeticum.*[10] The secrets unveiled in such texts are either set in relation to some imminent and decisive historical events (as in the case with oracular and apocalyptic literature), or they claim to impart the means to attain perfection ("wisdom"), salvation, or even immortality. The alchemical literature belongs to this second category. The writings of Chinese, Indian, Islamic and European alchemists refer to methods, experiments and recipes capable of healing men and thus prolonging human life indefinitely, but also capable of perfecting base metals, i.e., transmuting them into alchemical gold, and consequently able to grant human immortality.

It is significant that the injunction to secrecy and occultation is *not* abolished by the successful accomplishment of the alchemical work. According to Ko Hung,[11] the adepts who obtain the elixir and become "immortals" (*hsien*), continue to wander on earth, but they conceal their condition, i.e., their immortality, and are recognized as such only by a few fellow alchemists. Likewise, in India there is a vast literature, both in Sanskrit and in the vernaculars, in relation to some famous *siddhis,* i.e., yogi-alchemists, who live for centuries, but who seldom disclose their identity.[12] One encounters the same belief in Central and Western Europe: certain Hermetists and alchemists were reputed to live indefinitely without being recognized by their contemporaries (cf. Nicolas Flamel and his wife, Pernelle). In the seventeenth century a similar legend circulated about the Rosicrucians and, in the following century, on a more popular level, in relation to the mysterious Comte de Saint-Germain.

This mythical scenario—to wit, a primordial revelation rediscovered after a long period of occultation, presently accessible to a few initiates who, however, are bound to maintain the secret of their work—is highly significant for the understanding of alchemy. The stages of the alchemical *opus* constitute an initiation, a series of specific experiences aiming at the radical transformation of the human condition. But the successful initiate cannot express his new mode of being in an adequate profane language. He is compelled to use a "secret language." On the other hand, he refuses to publicize the results of his work—a fabulous longevity, the "earthly immortality," and so on—for the same reason that the

Buddha forbade the *bhikkhus'* displaying their "miraculous powers" (*siddhi):* because such "miraculous powers" would disturb the ignorants and confuse the innocents.[13]

I will not discuss here the origins of alchemy.[14] It is evident, however, that the objects of the alchemical quest—namely, health and longevity, transmutation of base metals into gold, production of the elixir of immortality—have a long prehistory in the East as well as in the West. Significantly, this prehistory reveals a specific mythico-religious structure. Indeed, there are innumerable myths that tell of a spring, a tree, a plant, or some other substance capable of bestowing longevity, rejuvenation, or immortality. One may note the Vedic *soma*, the Iranian *haoma*, the Greek ambrosia and the legendary Celtic cauldron that contains the food of immortality; or the Fountain of Youth, the miraculous herbs and the youth-bestowing fruits of a tree that is difficult to reach. Now, in all alchemical traditions, but particularly in Chinese alchemy, specific plants and fruits play an important role in the art of prolonging life and recovering a perennial youth.

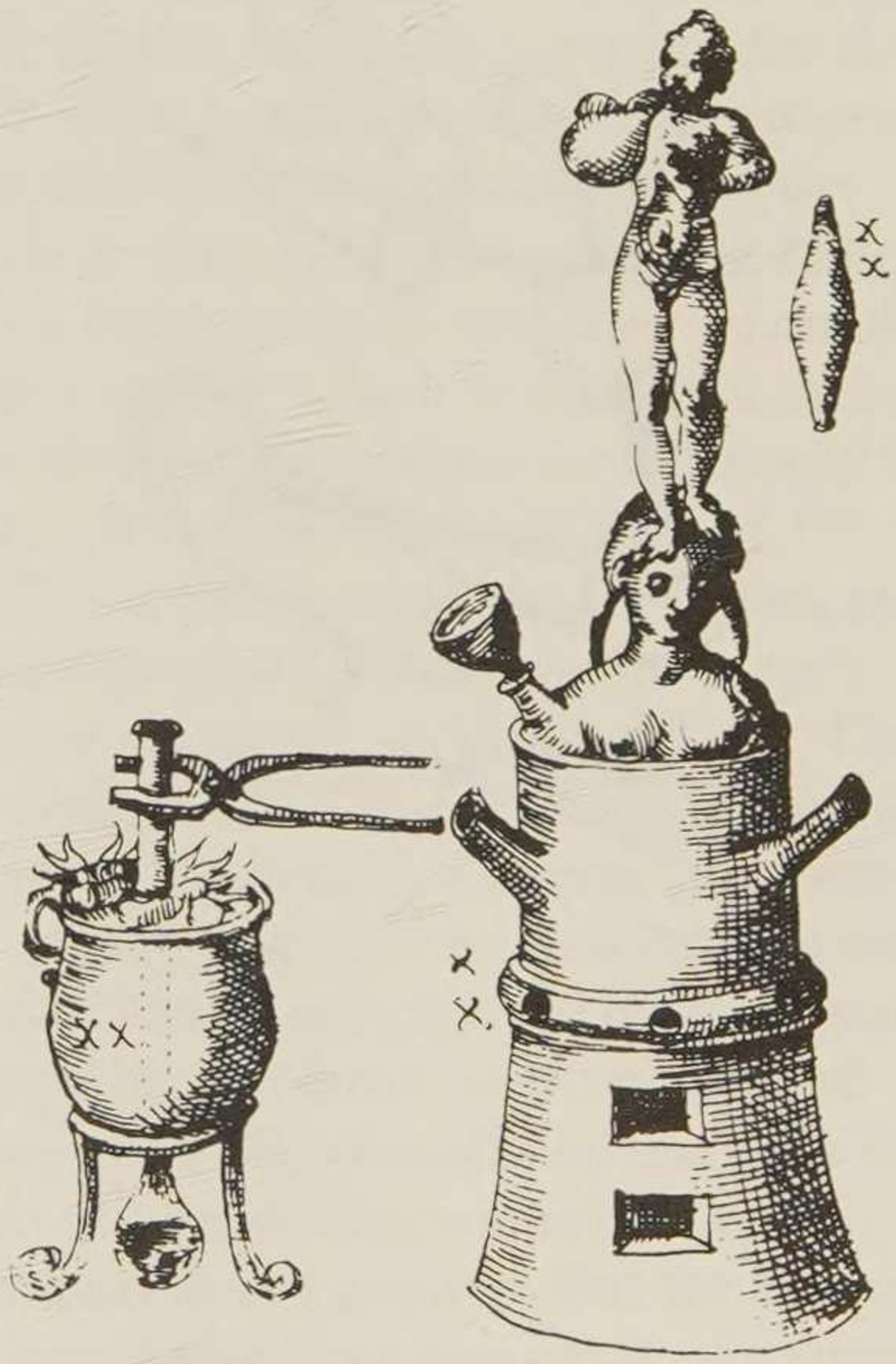
The continuity between an archaic mythico-ritual scenario and the alchemical quest is even more clearly illustrated in the adaptation and reinterpretation of the well-known ceremony of the symbolic return to origins. In ancient India, the exemplary initiatory ritual (*dīkṣā*) re-enacts in detail a *regressus ad uterum:* the practicant is shut in a hut symbolically assimilated to the womb—where he is transformed into an embryo. When the practicant comes out of the hut, he is compared to an embryo emerging from the womb, and proclaimed "born into the world of the gods."[15] Now, it is significant that Caraka, the greatest authority on Indian medicine, recommends an analogous treatment for curing the sick and especially for rejuvenating the old: the patient is shut in an obscure room for a number of days, where he undergoes a *regressus ad uterum.* (By the way, such a cure was applied in January-February 1938 to the 76 year-old Pandit Madan Mohan Mahaviya. The Indian press reported that the pandit came out from the room looking like a man of 60 years). The specific section of the Ayurveda Canon consecrated to rejuvenation is called *rasāyana,* literally, "the way of the organic juice."[16] But *rasāyana* came to designate "alchemy," and the term *rasā* was later used with the meaning "mercury," still later being erroneously understood by Alberuni to mean "gold." Thus, an archaic ritual of initiation, which accomplished a symbolic return to the womb followed by a rebirth into a higher spiritual state was integrated in the traditional Indian system of medicine, specifically as a technique of rejuvenation. Furthermore, the name of this technique of rejuvenation came to designate "alchemy," in its later usage.

A *regressus ad uterum* is also implied in the Taoist technique of "embryonic respiration." Here, the adept tries to imitate respiration within a closed circuit in the manner of a fetus. The goal of this yogic exercise is explained in a famous Taoist sentence:[17] "By returning to the base, by returning to the origin, one drives away old age, one returns to the fetal state." Another Taoist text puts it as follows: "That is why the Buddha Tathāgata in his great mercy, revealed the method of the (alchemical) work of Fire and taught men *to enter the womb again* in order to recreate their (true) nature and (the fullness) of their portion in life."[18] The same motif is frequently encountered in Western alchemy. From the many examples quoted in my book, I will recall this statement of Paracelsus: "He who would enter the Kingdom of God must first enter with his body into his mother and die." In an eighteenth century treatise, we read: "For I cannot otherwise reach the Kingdom of Heaven unless I am born a second time. Therefore I desire to return to the mother's womb, that I may be regenerated..."[19]

All these symbols, rituals and techniques emphasize one central idea: in order

to obtain rejuvenation or longevity, it is necessary to return to the origin and thus recommence life. But this idea implies the possibility of abolishing time—that is, the past. More precisely, it presupposes a certain control over the temporal flux. A somehow analogous conception can be deciphered behind the beliefs and practices of ancient miners and metallurgists. "Mineral substances, hidden in the womb of the Earth-Mother, shared in the sacredness attached to the goddess. Very early we are confronted with the idea that ores 'grow' in the belly of the earth after the manner of embryos. Metallurgy thus takes on the character of obstetrics. The miner and metal-worker intervenes in the unfolding of subterranean embryology: they accelerate the rhythm of the growth of ores, they collaborate in the work of Nature and assist it in giving birth more rapidly. In a word, man, with his various techniques, gradually takes the place of Time: his labors replace the work of Time."[20]

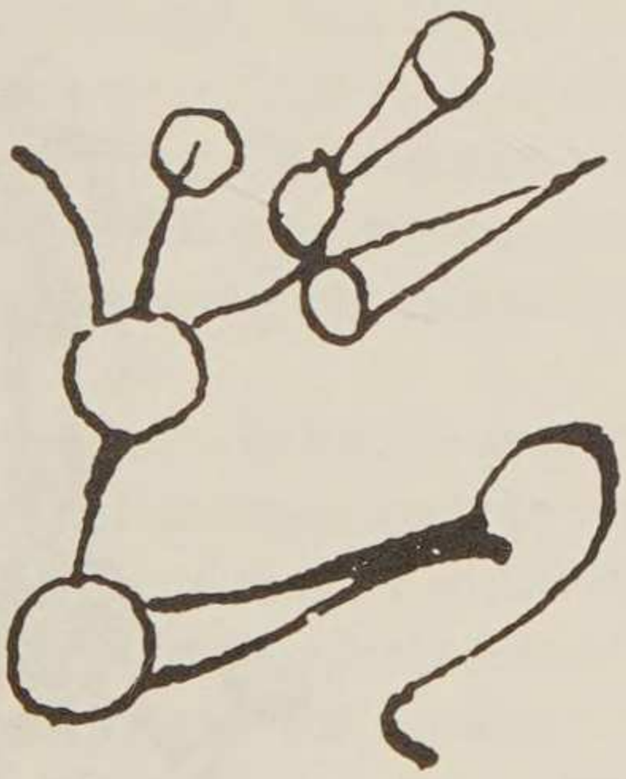
We shall discuss shortly the consequences of such a conception. With the help of fire, metal-workers transform the ores, i.e., the "embryos," into metals, i.e., the "adults." The underlying belief is that given enough time, the ores would have become "pure" metals in the womb of the Earth-Mother. Further, the "pure" metals would have become gold if they could "grow" undisturbed for a few more thousand years. Such beliefs are well known in many traditional societies and they survived in Western Europe until the industrial revolution. Already in the second century B.C., the Chinese alchemists declared that the "baser" minerals develop after many years into "nobler" minerals, and finally become silver and gold. Similar beliefs are shared by a number of South-East Asian populations. For instance, the Annamites were convinced that the gold found in the mines is formed slowly *in situ* over the course of centuries, and that if one had probed the earth originally, one would have discovered bronze in the place where gold is found today.[21]



It would be useless to multiply these examples. I will quote only one Western alchemist of the seventeenth century, who

wrote that: "If there were no exterior obstacles to the execution of her designs, Nature would always complete what she wishes to produce... That is why we have to look upon the birth of imperfect metals as we would on abortions and freaks which come about only because Nature has been, as it were, misdirected or because she has encountered some fettering resistance or certain obstacles which prevent her from behaving in her accustomed way... Hence although she wishes to produce only one metal, she finds herself constrained to create several. Gold and only gold is the child of her desires. Gold is her legitimate son because only gold is a genuine production of her efforts."[22]

The "nobility" of gold is thus the fruit at its most mature; the other metals are "common" because they are crude, "not ripe." In other words, Nature's final goal is the completion of the mineral kingdom, its ultimate "maturation." The natural transmutation of metals into gold is inscribed in their destiny, for the tendency of Nature is to perfection.



Symbol for the Philosopher's Stone

Such an extravagant exaltation of gold invites us to pause for a moment. There is a splendid mythology of *homo faber:* myths, legends and heroic poetry that reflect the first, decisive, conquests of the natural world achieved by early man. But gold does not belong to the mythology of *homo faber.* Gold is a creation of *homo religiosus:* this metal was valorized for exclusively symbolic and religious reasons. Gold was the first metal utilized by man, although it could be employed neither as tool nor as weapon. In the history of technological innovations—that is to say, the passage from stone technology to bronze industry, then to iron and finally to steel—gold played no role whatsoever. Furthermore, its exploitation is the most difficult of any metal. In order to obtain 6 to 12 grams of gold, one ton of rocks has to be brought from the mines to the surface. The exploitation of alluvial deposits is certainly less complicated, but also considerably less productive: a few centigrams for a cubic meter of sand. Compared with the effort invested in securing a few ounces of pure gold, the travail demanded in the exploita-

tion of oil is infinitely simpler and easier. Nevertheless, from the time of the Pharaohs to our own epoch, men have laboriously pursued this desperate search for gold. The primordial symbolic value of this metal could not be abolished, in spite of the progressive desacralization of Nature and of human existence.

"Gold is immortality," assert repeatedly the *Brāhmaṇas,* the post-Vedic ritual texts written from the eighth century B.C. onward. Consequently, to obtain the elixir that transmutes metals into alchemical gold is tantamount to obtaining immortality. The transmutation of base metals into gold is equivalent to a miraculously rapid maturation. According to the famous alchemist Arnold of Villanova, "there abides in Nature a certain pure matter which, being discovered and brought by Art to perfection, converts to itself all imperfect bodies that it touches." In other words, the Elixir (or the Philosopher's Stone) completes and consummates the work of Nature. As Frater Simone da Colonia put it: "This Art teaches us to make a remedy called the Elixir, which, being poured on imperfect metals, perfects them completely, and it is for this reason that it was invented."[23] The same idea is clearly expounded by Ben Jonson in his play, *The Alchemist* (Act II, Scene 2). One of the characters, Surly, hesitates to accept the alchemistic analogy between the growth of metals and the process of animal embryology, whereby, like a chicken hatching out from an egg, any metal would ultimately become gold as the result of the slow maturation that goes on in the bowels of the earth. For, says Surly, "the egg's ordained by Nature to that end, and is a chicken *in potentia."* But his interlocutor replies,"The same we say of lead and other metals, which would be gold if they had time." And another character adds: "And that our art doth further."

Moreover, the Elixir is capable of accelerating the temporal rhythm of all organisms and thus quickening their growth. Ramon Lull writes that "In Spring, by its great and marvelous heat, the Stone brings life to the plants: if thou dissolve the equivalent of a grain of salt in water, taking from this water enough to fill a nutshell, and then if thou water with it a vinestock, thy vinestock will bring forth ripe grapes in May."[24]

Besides, the Chinese as well as the Arabic and Western alchemies exalts the Elixir for its universal therapeutic virtues. Ko Hung repeatedly proclaims that the Elixir can "cure" the base metals and transmute them into gold. And Roger Bacon speaks in his *Opus Maius* of a "medicine which gets rid of impurities and all blemishes from the most base metal, can wash unclean things from the (human) body and prevents decay of the body to such an extent that it prolongs life by several centuries." In the words of Arnold Villanova: "The Philosopher's Stone cures all maladies. In one day it cures a malady which would last a month, in twelve days a sickness which would last a year... It restores youth to the old."[25]

Thus, it seems that the central secret of *opus alchemicum* is related to the adept's mastery of cosmic and human Time. One can distinguish in Nature three important temporal rhythms: geological time, vegetal and animal time, and human time. In other words, Nature is a gigantic living organism. Everything in Nature—from ores and stones to plants, animals and man—is the result of an insemination followed by germination and growth. But the temporal rhythms differ from one mode of existence to another. The maturation of minerals requires thousands and thousands of years, while plants grow, bear fruit and wither within a few months. To master Time means to be able to control its different rhythms, that is to say, to be able to change one temporal cycle into another. As we have seen, the early miners and metallurgists thought that, with the help of fire, they could speed up the growth of ores. The



Alchemical Allegory: The Soul Rising Towards God

alchemists were more ambitious: they thought they could "heal" base metals and accelerate their "maturation," thus transmuting them into nobler metals and finally into gold. But the alchemists went even further: their elixir was reputed to heal and to rejuvenate men as well, indefinitely prolonging their lives and making them into immortal beings. In sum, for the alchemists, life was an epiphany of organic Time.

But the alchemist's active intervention in the temporal cycle introduces a new element, which one is tempted to call "eschatological." In other words, the alchemical *opus*—healing, helping to mature, and perfecting different natural creations—brings forth, one may say, a *natural eschatology*. The alchemist anticipates the "glorious End and Completion" of Nature. Such a processus can be compared to Teilhard de Chardin's hope in a cosmic redemption through Christ, that is to say the transmutation of cosmic matter through the sacrament of the Mass.

As we shall see, there is a fundamental symmetry between Teilhard's optimistic theology, especially his hope in a cosmic eschatology accomplished by Christ, science, and technological progress—and the religious ideology of later Western alchemy. But before discussing these problems I must rapidly sum up the development of alchemy in Western and Central Europe. The enthusiasm provoked by the rediscovery of Neoplatonism and Hellenistic Hermetism at the beginning of the Italian Renaissance continued for the following two centuries. We know now that the impact of Neoplatonic and Hermetic doctrines was profound and creative on philosophy and the arts, and also played a major role in the development of alchemical chemistry, medicine, the natural sciences, education, and political theory.[26]

With regard to alchemy, we must keep in mind that a number of its basic presuppositions—such as the growth of ores, the transmutation of metals, the Elixir, and inevitably the obligatory secrecy—were carried on from the Middle Ages to the Renaissance and the Reformation. Scholars of the seventeenth century did not question, for instance, the natural growth of metals; rather they inquired whether the alchemist might assist Nature in this process and "whether those who claimed to have done so already were honest men, fools or imposters."[27] Herman Boerhaave (1664-1739), usually considered to be the first great rational chemist, famous for his empirically conducted experiments, still believed in transmutation. And we shall shortly discuss the importance of alchemy in Newton's scientific revolution. But, under the impact of Neoplatonism and Hermetism, the traditional alchemy, i.e., Arabic and western medieval alchemy, enlarged its frame of reference. The Aristotelian model was replaced by a Neoplatonic one, which emphasized the role of spiritual intermediaries between man, cosmos and the Supreme Deity. The old and universally diffused conviction of the alchemist's collaboration with Nature now received a Christological significance. The alchemists came to believe that, as Christ redeemed man through his death and resurrection, the *opus alchemi-*



cum would redeem Nature. The sixteenth century Hermetist, Heinrich Khunrath, identified the Philosopher's Stone as Jesus Christ, the "Son of Macrocosm," and thought that its discovery would reveal the true nature of the macrocosm, just as Christ bestowed wholeness to the microcosm, man.[28]

C.G. Jung has rightly insisted on this aspect of Renaissance and Reformation alchemy. In particular, he carefully investigated the parallel between Christ and the Philosopher's Stone.[29] In the eighteenth century, the Benedictine monk Don Pernety summarized as follows the alchemical interpretation of the Christian *Mysterium:*[30] "Their Elixir is originally a part of the World's universal Spirit, embodied in a Virgin Earth, from which he (i.e.,the Spirit) must be extracted, in order to undergo all the necessary operations before reaching the goal: the glorious and immutable perfection. In the first operation *(preparatio)*, the Spirit is tortured until he sheds his blood; in the (stage of) *putrefactio* he dies; when the white color *(albedo)* succeeds the black one *(nigredo)*, he comes forth from the darkness of his tomb and resuscitates in glory, ascends to heaven as a pure quintessence; from there he judges the living and the dead," the "dead" corresponding to that part of man which, being impure and subject to alteration, cannot resist the fire and is thus annihilated in Gehenna.



From the Renaissance onward, both the old operational alchemy and this more recent "mystical" and Christological reinterpretation played a decisive role in the astonishing cultural metamorphosis that made possible the triumph of the natural sciences and the industrial revolution. The hope of redeeming man and nature through the alchemical *opus* prolonged the nostalgia for a radical *renovatio* that obsessed Western Christendom since Giacchino da Fiore. Regeneration, that is the "spiritual rebirth," was the Christian goal par excellence, but for many reasons became ever less present in institutionalized religious life. Rather, this nostalgia for an authentic "spiritual rebirth," the hope for a collective *metanoia* and transfiguration of history, inspired the medieval and Renaissance popular mille-

narian movements, prophetic theologies, and mystical visions, as well as Hermetic Gnosis.

What is even more significant is the fact that a similar hope inspired what can be called the chemical reinterpretation of the *opus alchemicum.* The famous alchemist, mathematician, and encyclopedic scholar John Dee (b. 1527), who assured the Emperor Rudolf II that he possessed the secret of transmutation, thought that a world reform could be achieved through the spiritual powers released by occult—especially alchemical—operations.[31] The English alchemist Elias Ashmole, like many of his contemporaries, considered alchemy, astrology, and natural magic as the savior of the sciences of their days. Indeed, for the followers of Paracelsus and van Helmont, only through the study of "chemical philosophy" (i.e., the new alchemy) or "true medicine" could Nature be understood.[32] Chemistry and not astronomy was considered to be the key that would unlock the secrets of heaven and earth. Alchemy had a divine significance. Since the Creation was understood as a chemical process, both earthly and celestial phenomena were interpreted in chemical terms. On the basis of macrocosm-microcosm relationships, the "chemical philosopher" could learn the secrets of earthly as well as heavenly bodies. Thus, Robert Fludd gave a chemical description of the circulation of the blood, which paralleled the circular motion of the sun.[33]

Like many of their contemporaries, the Hermetists and the "chemical philosophers" were expecting—and some of them actively preparing—a radical and general reform of all religious, social and cultural institutions. The first, indispensable stage of this universal *renovatio* was the reform of learning. The *Fama Fraternitatis,* a short book published anonymously in 1614, which launched the Rosicrucian movement, called for a new type of learning. The mythical founder of the order, Christian Rosenkrantz, was reputed to have mastered the true secrets of medicine—and thus all science. He then wrote a number of books which are kept secret and are studied only by the members of the Rosicrucian order.[34] Thus, at the beginning of the seventeenth century, we are confronted again with the old, familiar mythical scenario: a primordial revelation written down by a fabulous personage and hidden for centuries, which was lately rediscovered and is communicated only to a secret group of initiates. And, as was the case with many Chinese, Tantric, and Hellenistic texts, the rediscovery of the primordial revelation, although still inaccessible to profane men, is announced to the world in order to attract the attention of those who honestly search for truth and salvation. Indeed, the author of the *Fama Fraternitatis* asked all the learned scholars of Europe to examine their art and to join the Rosicrucian Brotherhood in the reformation of learning; in other words, to hasten the general *renovatio.* The response to this appeal was tremendous, and in less than ten years, several hundred books and tracts appeared, debating the merits of the secret group.

In 1619, Johann Valentin Andreae, who is supposed by some historians to be the author of the *Fama,* published *Christianopolis,* a book that probably influenced Bacon's *New Atlantis.*[35] In *Christianopolis,* Andreae suggested that a proper community be formed in order to elaborate a new method of learning based on "chemical philosophy." In that Utopian city, the center for such studies would be the laboratory; there the "sky and the earth are married together," and the "divine mysteries impressed upon the land are discovered."[36] Among the defenders of *Fama Fraternitatis,* and thus of the Rosicrucian order, was Robert Fludd, a fellow of the Royal College of Physicians, who was also an adept of mystical alchemy. He emphatically stated that it was impossible for anyone to attain the highest knowl-

edge of natural philosophy without serious training in the occult sciences. For him, the "true medicine" was the very basis of natural philosophy. Our knowledge of the microcosm—i.e., the human body—will teach us the structure of the universe, and will thus lead us to our Creator. Similarly, the more we learn of the universe, the more we will know about ourselves.[37]

Recent studies—especially those of Debus and Frances Yates—have thrown a new light on the consequences of this search for a new learning based on "philosophical chemistry" and the occult sciences. The importance conferred on the experimental probing of alchemical recipes in well-equipped laboratories prepared the way for a rationalistic chemistry. The continuous systematic exchange of information among the practitioners of the sciences brought on the creation of many academies and learned societies. But the myth of the "true alchemy" did not lose its impact, even on the authors of the scientific revolution. In an essay published in 1658, Robert Boyle advocated the free communication of alchemical as well as medical secrets.[38] On the other hand, Newton thought that it was not safe to make alchemical secrets public and wrote to the Secretary of the Royal Society that Boyle should keep "high silence" on these matters.[39]

Newton never published the results of his alchemical studies and experiments, although he declared that some of his experiments were successful. His innumerable alchemical manuscripts, however—which were neglected until 1940—have been thoroughly investigated by Professor Dobbs in her book *The Foundations of Newton's Alchemy.*[40] According to Dobbs, Newton probed "the whole vast literature of the older alchemy as it has never been probed before or since" (p. 88). Newton sought in alchemy the structure of the small world to match his cosmological system. The discovery of the force which held the planets in their orbits did not satisfy him completely. But in spite of his intensive experiments from about 1668 to 1696, he failed to find the forces which govern the action of small bodies. However, when, in 1679-80, he began to work seriously on the dynamics of orbital motion, he applied his chemical ideas of attraction to the cosmos.[41]

As McGuire and Rattans have shown, Newton was convinced that in earliest times, "God had imparted the secrets of natural philosophy and of the true religion to a select few. This knowledge was subsequently lost but partially recovered later, at which time it was incorporated in fables and mythic formulations where it would remain hidden from the vulgar. In modern days it could be more fully recovered from experience."[42] For this reason, Newton usually turned to the most esoteric sections of alchemical literature, hoping that the real secrets were hidden there. It is highly significant that the founder of modern mechanical science did not reject the theology of the primordial secret revelation, nor did he reject the principle of transmutation, the basis of all alchemies. He wrote in his treatise on *Opticks:* "The changing of Bodies into Light, and Light into Bodies, is very conformable to the course of Nature, which seems delighted with Transmutation."[43] According to Professor Dobbs, "Newton's alchemical thoughts were so securely established on their basic foundations that he never came to deny their general validity, and in a sense the whole of his career after 1675 may be seen as one long attempt to integrate alchemy and the mechanical philosophy."[44]

When the *Principia* was published, Newton's opponents emphatically declared that Newton's forces were in fact occult qualities. Professor Dobbs admits that his critics were right: "Newton's forces were very much like the hidden sympathies and antipathies found in much of the occult literature of the Renaissance period. But Newton had given forces an ontological status equiva-

lent to that of matter and motion. By so doing, and by quantifying the forces, he enabled the mechanical philosophies to rise above the level of imaginary impact mechanism" (p. 211). In his book, *Force in Newton's Physics,* Professor Richard Westfall came to the conclusion that it was the *wedding* of the Hermetic tradition with the mechanical philosophy which produced modern science as its offspring.[45]

In its spectacular development, "modern science" has ignored or rejected its Hermetic heritage. In other words, the triumph of Newton's mechanics abolished Newton's own scientific ideal. As a matter of fact, Newton and his contemporaries had expected quite another type of scientific revolution. Prolonging and expanding on the hopes and objectives of the neo-alchemist of the Renaissance—that is, the endeavor to redeem Nature—men as different as Paracelsus, John Dee, Comenius, J.V. Andreae, Ashmole, Fludd and Newton saw in alchemy the model for a more ambitious enterprise: namely, the perfection of man through a new method of learning. In their view, such a method would integrate a supra-confessional Christianity with the Hermetic tradition and the natural sciences, i.e., medicine, astronomy, and mechanics. This ambitious synthesis was in fact a new religious creation, specifically Christian, and is comparable with the results of the previous integration of Platonic, Aristotelian and Neo-Platonic metaphysical constructs. The type of "learning" elaborated in the seventeenth century represented the last holistic enterprise attempted in Christian Europe. Such holistic systems of knowledge were proposed in ancient Greece by Pythagoras and Plato, but they characterize especially the Chinese culture, where no art, science, or technology was intelligible without its cosmological, ethical, and "existential" presuppositions and implications.

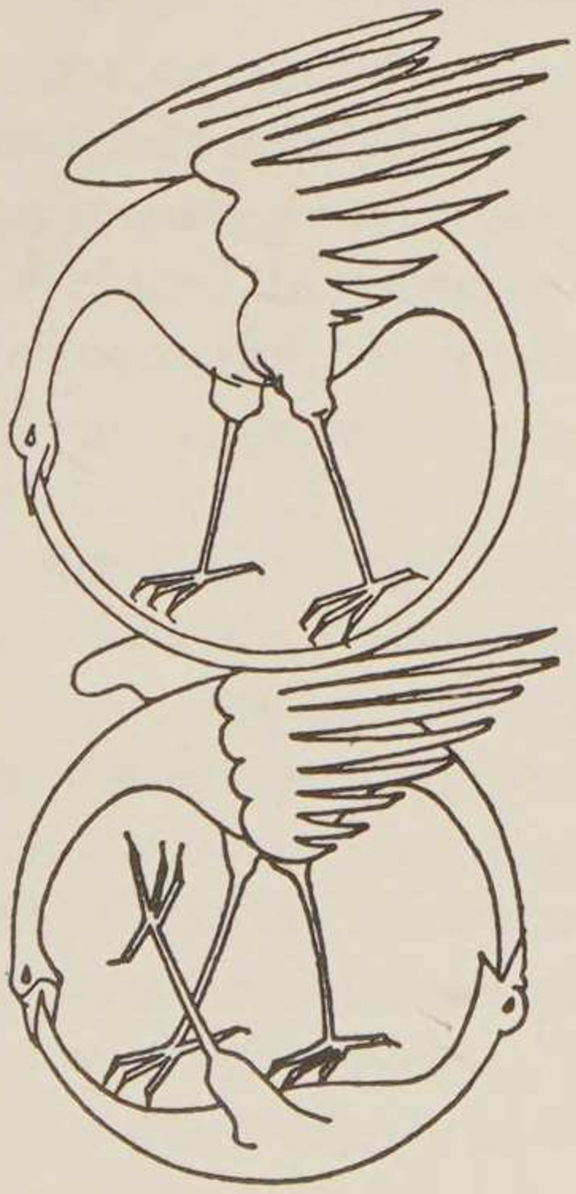


The Alchemical Marriage

To conclude, we may say that the alchemist completed the last stage of the very ancient program, begun by early man the moment he undertook to transform Nature. The concept of alchemical transmutation is the last expression of the immemorial belief in the possibility of changing Nature by

human labor. The myth of alchemy is one of the rare optimistic myths. Indeed, the *opus alchemicum* not only changes, perfects, or redeems Nature, but also brings to perfection human existence: it confers health, perennial youth, and even immortality. In the perspective of history of religions, one can say that through alchemy man recovers his original perfection, the loss of which is recounted in so many tragic myths from all over the world.

For the alchemist, man is seen as *creative:* he redeems Nature, masters Time, in sum, perfects God's Creation. This "natural eschatology" can be compared to Teilhard de Chardin's theology of cosmic evolution and cosmic redemption. And, as is generally admitted, the theology of Teilhard is one of the rare optimistic Christian theologies. It is certainly *this* conception of man as an imaginative and inexhaustibly *creative being,* that explains the survival of the alchemist's ideals in the nineteenth century ideology. Of course, these ideals were radically secularized in that period. Moreover, their survival does not become immediately evident at the moment when alchemy itself disappeared. The triumph of experimental science did not abolish the dreams and ideals of the alchemist, but on the contrary, the new ideology of the nineteenth century crystallized around the myth of infinite progress. Boosted by the experimental sciences and the progress of industrialization, this ideology took up and carried forward—radical secularization notwithstanding—the millenarian dream of the alchemist.[46] The myth of the perfection and redemption of Nature survives in camouflaged form in the Promethean program of industrialized societies, whose aim is the transformation of Nature, and especially the transmutation of Nature into "energy." It is also in the nineteenth century that man succeeds in supplanting Time. His desire to accelerate the natural tempo of organic and inorganic beings now begins to come true, as the synthethic products of organic chemistry demonstrated the possibility of accelerating and even eliminating Time, preparing in laboratories and factories substances which it would have taken Nature thousands and thousands of years to pro-





Sign Table used by Alchemists

duce. We also know to what extent the "synthetic preparation of life," even in the modest form of a few cells of protoplasm, was the supreme dream of science from the second half of the nineteenth century to our own time.

By conquering Nature through the physico-chemical sciences, man can become Nature's rival without being the slave of Time. Henceforth, science and labor are to do the work of Time. With what he recognizes as most essential in himself—his applied intelligence and his capacity for work—modern man takes upon himself the function of temporal duration; in other words, he takes on the role of Time. Of course, man has been condemned to work from the very beginning. But in traditional societies, work had a religious, a liturgical dimension. Now, in modern industrialized

societies, work has been radically secularized. For the first time in his history, man has assumed the task of "doing better and quicker than Nature," without having the sacred dimension at his disposal, which in other societies made work bearable. The total secularization of work, of human labor, had tremendous consequences, comparable only to the consequences of the domestication of fire and the discovery of agriculture.

But this is another matter...[47]



Notes:

1. *Forgerons et alchimistes* (Paris, 1955); *The Forge and the Crucible,* trans. by Stephen Corrin (London and New York, 1962). See also, "The Forge and the Crucible: A Postscript," *History of Religions* 8 (1968), pp. 74-88.

2. Joseph Needham, *Science and Civilization in China* (Cambridge, 1954-), especially vol. II and V,2 (1974); Nathan Sivin, *Chinese Alchemy: Preliminary Studies* (Cambridge, Mass., 1968); see our review in *History of Religions* 10 (1970), pp. 178-82.

3. Paul Kraus, "Jābir ibn Hayyān: Contributions á l'histoire des idées scientifiques dans l'Islam, I-II," *Memoires de l'Institut d'Egypte* (Cairo, 1942), pp. 1-214, (1943), pp. 1-406; Henry Corbin, "Le 'Livre du Glorieux' de Jābir ibn Hayyān," *Eranos Jahrbuch* 18 (1950), pp. 47-114; cf. *En Islam iranien,* I-IV (Paris, 1971-72), index, vol. IV, s.v.: alchimie, alchimique.

4. See, inter alia, "Gnosticism and alchemy," *Ambix* 6 (1957), pp. 86-101; "The Redemption Theme and Hellenistic Alchemy," *Ambix* 7 (1959), pp. 42-76; "The Ouroborus and the Unity of Matter in Alchemy: A Study in Origins," *Ambix* 10 (1962), pp. 83-96.

5. Among the numerous contributions of Walter Pagel, see especially *Paracelsus: An Introduction to Philosophical Medicine in the Era of the Renaissance* (Basel and New York, 1958; trans. fr. *Paracelse,* Paris, 1963); *Das medizinisch Weltbild des Paracelsus, seine Zusammenhänge mit Neuplatonismus und Gnosis* (Wiesbaden, 1962). See also Allen G. Debus, *The English Paracelsians* (London, 1965); *The Chemical Dream of the Renaissance* (Cambridge, 1968); "Alchemy and the Historian of Science," *History of Science* 6 (1967), pp. 128-38; "The Chemical Philosophers: Chemical Medicine from Paracelsus to van Helmont," *History of Science* 12 (1974), pp. 235-59.

6. Ko Hung, *Pao-p'u Tzu,* chapter 16, trans. Lu-Ch'iang Wu and Tenney L. Davis, *Proceedings of the American Academy of Arts and Sciences* 70 (1935), pp. 221-84, see esp. pp. 262-63.

7. Quoted in *The Forge and the Crucible,* p. 164.

8. Zadith Senior, quoted in *The Forge and the Crucible,* p.164.

9. Cf. *De usu partium,* 7:14.

10. Cf. the texts quoted and discussed by Martin Hengel, *Judaism and Hellenism* (Philadelphia, 1974), I, pp. 211-43; II, pp. 139-64.

11. *Pao-p'u Tzu,* ch. 3, trans. Eugene Feifel, *Monumenta Serica* 6 (1941), pp. 113-211, esp. p. 182 ff.

12. Cf. M. Eliade, *Yoga: Immortality and Freedom* (New York, 1958), pp. 296-97.

13. Cf. Eliade, *Yoga,* p. 179.

14. Cf. Eliade, "The Forge and the Crucible: A Postscript," pp. 77-78; N. Sivin, op. cit., pp. 22-23; Robert P. Multhau, *The Origins of Chemistry* (New York, 1967), pp. 82-83; and especially J. Needham, *Science and Civilisation in China,* V, 2, pp.14 ff.

15. Cf. M. Eliade, *Birth and Rebirth: The Religious Meanings of Initiation in Human Culture* (New York, 1958), pp. 53-54.

16. Cf. Arion Rosu, "Considerations sur une technique du *rasāyana* ayurvédique," *Indo-Iranian Journal* 17 (1975), pp. 1-29, esp. pp. 4-5.

17. *T'ai-si K'eou Kiue* ("Oral Formulas for Embryonic Breathing"), quoted in *The Forge and Crucible,* p. 126.

18. Quoted, *ibid.,* p. 119.

19. Quoted, *ibid.,* p. 154.

20. *Ibid.,* p. 8.

21. *Ibid.,* p. 50.

22. *Ibid.*

23. Quoted, *ibid.,* p. 166.

24. *Ibid.,* p. 167.

25. *Ibid.*

26. See W. Pagel, *Paracelsus;* Frances Yates, *Giordano Bruno and the Hermetic Tradition* (Chicago, 1965); idem, *The Rosicrucian Enlightenment.*

27. Betty J. Teeter Dobbs, *The Foundation of Newton's Alchemy.* (Cambridge, 1975), p. 44.

28. *Ibid.,* p. 54.

29. Cf. especially *Psychology and Alchemy,* trans. by R.F.C. Hull, 2nd edition (Princeton, 1968), pp. 345 ff. ("The Lapis-Christ Parallel").

30. Dom A.J. Pernety, *Dictionnaire mytho-hermétique* (Paris, 1758; reprint, collection "Arché," Milan, 1969), p. 349.

31. Cf. Peter French, *John Dee;* R.J.W. Evans, *Rudolf II and his World,* pp. 218-28. On John Dee's influence upon Khunrath, cf. Frances Yates, *The Rosicrucian Enlightenment,* pp. 37-38.

32. A.G. Debus, "Alchemy and the Historian of Science," p. 134.

33. A.G. Debus, *The Chemical Dream of the Renaissance,* pp. 7, 14-15.

34. *Ibid.,* pp. 17-18. *Fama Fraternitatis* is reprinted in Yates, *The Rosicrucian Enlightenment,* pp. 238-51. A French translation of *Fama,* the *Confessio Fraternitatis R.C.* (1615) and *The Chymical Marriage of Christian Rosencreutz* of J.V. Andreae (1586-1654) was brought out by Bernard Gorceix, *La Bible des Rose-Croix* (Paris, 1970).

35. Cf. Andreae, *Christianopolis, an Ideal State of the Seventeenth Century,* trans. by Felix Emil Held, (New York and London, 1916). See also Yates, *The Rosicrucian Enlightenment,* pp. 145-46; Debus, *The Chemical Dream,* pp. 19-20; John Warwick Montgomery, *Cross and Crucible. Johann Valentin Andreae (1586-1654), Phoenix of the Theologians,* I-II (The Hague, 1973).

36. *Christianopolis* (trans. Held), pp. 196-97.

37. Robert Fludd, *Apologia Compendiaris Fraternitatem de Rosea Cruce Suspicionis et Infamiae Maculis Aspersam, Veritatis quasi Fluctibus abluens et abstergens* (Leiden, 1616), pp. 89-93, 100-103, quoted by Debus, op. cit., pp. 22-23.

38. The essay was reprinted, with commentary, by Margaret E. Rowbottom, "The earliest published writing of Robert Fludd," *Annals of Science* 6 (1950), pp. 376-89. "If ... the Elixir be a secret, that we owe wholly to our Makers Revelation, not our own industry, methinks we should not so much grudge to impart what we did not labour to acquire, since our Saviour's prescription in the like case was this: *Freely ye have received, freely give,"* etc.; Rowbottom, p. 384. The above quotation is reproduced by Dobbs, *The Foundations of Newton's Alchemy,* pp. 68-69.

39. Fragments of this letter to Henry Oldenburg, April 26, 1676 (Newton, *Correspondence,* II, pp. 1-3) are quoted by Dobbs, op. cit., p. 195.

40. The history of Newton's alchemical manuscripts until their partial recovery by John Maynard Keynes in 1936-39 is related by Dobbs, p. 6 ff.

41. Richard S. Westfall, "Newton and the Hermetic Tradition," in *Science, Medicine and Society in the Renaissance. Essays to honor Walter Pagel,* edited by Allen G. Debus (New York, 1972), Vol. II, pp. 183-98, esp. pp. 193-94; Dobbs, p. 211.

42. Dobbs, p. 90, referring to E. McGuire and P.M. Rattansi, "Newton and the 'Pipes of Pan'," *Notes and Records of the Royal Society of London* 21 (1966), pp. 108-43.

43. Newton, *Opticks* (London, 1704; reprint of the 4th edition (1730): New York, 1952), p. 374, quoted by Dobbs, p. 231.

44. Op. cit., p. 230.

45. Richard S. Westfall, *Force in Newton's Physics. The Science of Dynamics in the Seventeenth Century* (London and New York, 1971), pp. 377-91; Dobbs, op. cit., p. 211.

46. Eliade, *The Forge and the Crucible,* pp. 172-73.

47. *Ibid.,* pp. 176-78.

Alchemy & Craft

by D.M. Dooling



What is the origin of craft, and what is its true goal?

If we try to retrace its history, or to follow any single craft back to its beginning, we arrive at something beyond time and place, and find ourselves in the realm of myth. The first sculptor, say the Egyptians, was Osiris himself; he taught men how to raise crops, build temples and play the flute. The Blackfoot Indians tell us that it was Old Man who showed them how to make everything they needed. "Always at bottom there is a divine revelation, a divine act, and man has only the bright idea of copying it. That is how the crafts all came into existence and is why they all have a mystical background. In primitive civilizations one is still aware of it, and this accounts for the fact that generally they are better craftsmen than we who have lost this awareness. If we think that every craft, whether carpenter's or smith's or weaver's, was a divine revelation, then we understand better the mystical process which certain creation myths characterise as God creating the world like a craftsman."[1]

The first god-begotten hero-king of all nations and races, like Osiris in Egypt and Quetzalcoatl in Mexico, was the one who taught the arts and showed people how to make tools. Usually this same hero was the first smith, or the bringer of fire, for it is by fire alone that weapons and tools are forged. Creation belongs to God, but the work of man's hands, imitating the divine model, makes him the apprentice and perhaps at last the helper of the supreme Master Craftsman. The transformation of clay into pottery, of a lump of metal into a sword, of a matted sheep's pelt into a peacock-colored rug, appeared in earlier times as "the manifestation of a magico-religious power which could modify the world and which, consequently, did not belong to this world."[2] Fire has brought about each of these tranforming processes, a new order and a new beauty has been revealed in coarse matter, and the maker has discovered in himself a new level of being: he has become God's assistant in the work of creation.

Fire then is truly a divine attribute, the magical agent of life itself, since it can

bring about "in the twinkling of an eye" the changes wrought otherwise only by the slow processes of nature. By learning to control fire, man with his own hands can hasten nature's perfecting.

It is a very old belief (and who is to say that is has entirely disappeared, or that it is entirely mistaken?) that the process of creation is evolutionary growth: the bringing to perfection of all that is created, including matter and including man. God's intention, in other words, and the obedient tendency of nature, is towards "maturity," or perfection. In ancient times, metal ores were thought to be embryos of metals which would in time become gold, which, as the makers of the Tabernacle knew, is the most perfect of all metals, the metal of immortality and of the Sun. Left to themselves, in the course of countless thousands of years, ores would grow into metals, and metals into gold; but with fire the metal worker could accomplish in hours what would take nature so many centuries; he could "transform" ores by smelting, and change the character of metals. And by so doing he himself was changed and took on the character of one set apart: a magician, a wielder of power, a collaborator with the Creator. In recognition of this, corresponding qualities were expected of him, and he must obey certain disciplines. The alchemist "must be healthy, humble, patient, chaste; his mind must be free and in harmony with his work; he must be intelligent and scholarly, he must work, meditate, pray..."[3] And even today, in Africa, we are told that "the artisan who works the gold must first of all purify himself, must wash himself from head to foot, and during the time of work, must abstain from sexual intercourse."[4]



The gold of alchemy was just this hastened perfection, inner and outer, the divinization of matter and of man. It would be as foolish to consider alchemy merely the "pseudo-science" of making gold out of base metals, as to suppose that the whole aim of craft is simply the production of objects, however beautiful. All serious students of alchemy stress that the "Great Work" was basically that of inner transformation; but that the process of a concrete transmutation outside oneself, the actual transmutation of metals, was a necessary part of the inner process. Alchemy was not simply symbolical. The attempt to bring metals to the perfection of gold was a vital exercise, at once a cause and a result, of the inner perfecting. This idea is certainly not strange to any craftsman. "When a man undertakes to create something," said the famous doctor and alchemist Paracelsus, "he establishes a new heaven, as it were, and from it the work that he desires to create flows into him." In order that it may be expressed, that it may resound, the Word must be made flesh; immortality must be incarnated outwardly in gold, and inwardly in the development of a subtle body within this ordinary body: the "glorious body," or "diamond body" of oriental tradition, the "spiritual body" of the Christian.* The alchemists equated the glorious body with the Philosopher's Stone of a hundred names—the elixir, the tincture, the quintessence—and their striving was to acquire it before the death of the physical body, in this life and not at the last trump. Man as well as nature could be saved from the long wait through eons of time, and the risk of disappearance in the slow cycles of nature, by his own activity, "the Great Work." This was his part in the endless march of creation, and his possible "doing" and "making."

The alchemical process, then, was an accelerated repetition of the process of cre-

*S. Paul, I Corinthians 15, 42: "it is born a physical body, it is raised a spiritual body."

The Struggle of the Craftsman

by Harry Remde



I knead a large lump of clay, attempting, through my hands, to know all about the process. At times the clay moves so effortlessly that my hands seem to follow, not to initiate, the movements of the clay. I try to observe how my thoughts and feelings respond to what is happening. I notice an emotion in my hands that seems to connect them with my chest, and by means of which I derive special information about the clay. I feel that I begin to know the clay; my hands are surfaces that contain it in every direction. The clay cannot move except by instruction from my hands. Each instruction is the same. The lump is clasped and pushed down upon itself. Clay flows to the center of the lump where it is lost in the mass. From there it will follow an outward path. My hands watch constantly. After a few minutes, when the texture of the clay has ceased to change, my hands tell me to stop.

Kneading is the potter's first experience of the workable clay. In kneading he becomes familiar with the clay. The motion of his hands and the clay is part of the circular movement that is the essence of the craft. The potter experiences roundness as he kneads. The pot begins early, before the clay has had sight of the wheel.

Pottery is unique among the crafts in that the pot arises from a center. The clay on the wheel is centered by the hands. The revolving clay is quiet; in the quietness is the center. The clay obeys the axis of the wheel. As the wall spins higher the clay possesses a decreasing tolerance within which the wall can depart from the center and the center not be lost. Without this tolerance the wall could not grow. Not to exceed the tolerance is the struggle of the pot. The struggle will show when the pot is done. Tension will be in the wall to the lip of the pot, where the pot ends in the air. If there is much tension, when I see the pot end in the air, I inwardly laugh, ha-ha.

The thickness of the wall knows the center; the height knows it also. The rising wall tests the center, pulling away from it this way and that. The growing pot is a constant test of its essence. All the way up, the wall moves back and forth, attempting to know what it is. By this movement, tension appears in the wall. When the tension is high, the wall is thin, irrespective of its physical thickness. The pot is able to hold space. There is much tension in a separating wall.

Of two pots of equal size, one may hold more space than the other. Greater tension permits the larger volume. Until a level of tension

ation. And here we enter deep waters; for how can we examine anything so huge as the "process of creation" of which we ourselves are so small a part, or anything so vague as the alchemical process which has never been described twice in the same way? But then, we are already in the gravest of difficulties by our very attempt to face the mystery of the possibilities of our own "doing" and "making." And in any case, it is only those who are willing to plunge into water over their heads who will ever try to understand what it is to become

is reached, the clay cannot separate, cannot be a wall. The clay remains an object. When the tension is high, strong forces meet at the boundary. There are walls that no force can penetrate. Such a wall is always the product of love.

It is the turning into the perpendicular direction, away from the path, that makes a wall. There is a wall between the craftsman and his work just as there are walls between the steps in his work. It is his separation from the work that allows it to proceed. By doing just enough, by the touch that ends as it touches, the craftsman is able to stay separate from his work.

The struggle of the craftsman produced the roundness of the pot.

To work according to these laws is to encompass the existence of what can be built; to move the clay, wood, wool, stones, not lovingly, but with love. Such is the ability of the craftsman, who can abide within himself. A craft is not merely a relaxation, a refreshment after efforts, or even a livelihood, although it may be any of these. Its pursuit is difficult, and few desire to try it. Whether everything is ultimately possible through work in a craft we do not know. But, much is possible. This is the purpose of the craft, so much being possible in it. The craftsman learns about himself as he works; while he learns, the work exists. He begins to understand, being as dependent on the craft as it is on him.

The heart leaps; the head knows; the body performs. These are the three ingredients in a craft.

The greatest love connects the highest and the lowest. The distance, the tension, between that which knows and that which follows is the measure of love. The head and body, the active and passive forces in a craft, are equally needed in order to be united by that which can flow between them. The existence of the two together is the gift given, not worked for. They are united, made necessary to each other, by love.

The distance-between is, for flowing In this way a boundary is created.

Where is the craftsman? How can I find him in myself?

Excerpted from The Art in a Craft *by Harry Remde Toronto: Traditional Studies Press 1975.*[7]

true craftsmen, let alone alchemists—those amazingly brave apprentices of a craft which had no known masters, a craft never surely proved to have produced a positive result, and which exposed its followers to scorn, persecution and ruin. Working perforce in darkness and in secret, it is no wonder that the descriptions they gave of the "alchemical process" are not only obscure but contradictory. Nevertheless, we can perhaps recognize a pattern, and see in it reflections of the ancient analogies of the creation myths.



In Genesis, for example, out of the chaos of undifferentiated matter, God brings order by distinguishing and separating the elements: light and darkness; sea, land and sky; solid, liquid and gaseous. And the differentiation continues: animal from plant, then in all their details each form of life "in its own kind," and man, and woman. Only then when everything is distinct and separated from every other thing can a new order be established; the opposites can come together again in a new relationship, man with woman, human with animal and plant. "It is as if spirit and soul had to be separated from one another, in order, after their 'divorce', to become 'married' again."[5] A law of creation seems to appear: the substances must be sorted out, separated and opposed, in order to connect again in a new way; as, in an individual being, the differentiation of sex becomes more and more precise before the opposite poles can unite for a new generation.

"Separate earth from fire, and the subtle from the gross, softly and with great care," say the Emerald Tablets; and other more detailed accounts of the process indicate how the original substances in the alchemist's athanor must be dissolved and reprojected into new formations, each time more pure and more separated, until at last they come together as the two opposing male and female principles, the "above" and "below," Sun and Moon, represented in alchemy by Sulphur and Mercury. Then these may be joined in the fiery bath of the crucible in the "marriage of the King and Queen."

However differently the process is described by different students of alchemy, certain principles emerge, which are recognizable as belonging to all processes of transformation, big or small, psychic or physical. As these principles become clear, the different descriptions become less contradictory and more analogous, and alchemy, even in its operational aspect, ceases to be a strange superstition of a past epoch and speaks quite practically of man the maker, the apprentice craftsman, myself. "To make gold, one must have gold," was an alchemistic aphorism; and Vaughan says of the "tincture," or "fire," that "it is in minerals, herbs and beasts; it is in man, stars and angels; but originally it is in God Himself."[6] We cannot think of creation, even that small creation of our own handiwork, without fire of both kinds: that of the kiln and the dyeing vat, which give form and color to our artifacts, and of the forge which produces the tools of our crafts; and the inner fire of feeling and of vision, represented by the sun-gold of light, heat and the "solar" plexus, without which nothing beautiful can be made. The alchemical paradox of the "volatilization of the solid and the solidification of the volatile," of "burning water and liquid fire," are quite understandable for the artist who acknowledges that to produce true art, he himself must be changed and come to a finer state: a "spiritualization of the body," the instrument, before there can be an "embodiment of the spirit."

And of course this "becoming" is what alchemy is about. Its process can also be expressed by the traditional formula of initiation: the suffering, death and resurrection of the god or the neophyte, represented by the substances in the crucible or by the material of the craftsman—the symbolic for-

mula of transformation. Osiris, the divine craftsman of the Egyptians, is slain by his brother and his body is dismembered and scattered; but he lives again to beget Horus and to become the king of the dead. Quetzalcoatl sacrifices himself in the fire to atone for the sins of the body, and is resurrected as the morning star; the twin heroes of the Popol Vuh leap together into the bonfire prepared by the enemy gods, but rise from their ashes and conquer the Underworld. And following these divine examples, candidates for initiation suffer tortures and ritual death in order to attain another state of being. In each case, whether raw material, base metal, divine or human spirit, there must be the suffering of purification and separation. The patience* that has been spoken of as the quality most vital to the craftsman is, in the final analysis, no other than this suffering, as it applies to the process of creation operating in and upon the artisan himself. And as the alchemical substance is "punished," so is the craftsman's material: the clay is pounded, flax beaten, wool teased, carded and twisted, metal softened and struck. The substance, whether material or human, must change its character, be torn into separate elements in order to be re-formed into something other—it must "die" in order to be "reborn."

And here we come to the central tenet of alchemy: its chief absurdity, proof (some would say) that in its operational sense at least it was all superstition and quackery; the idea that matter is alive. Yet, strangely enough, this is something that every craftsman knows to be true. He knows that his material has a life of its own, a history, a character, needs and possibilities unlike any other. He knows that he must feel and understand this life so that a relation can appear between it and his own. He accepts a pattern for his work that is not "his," that comes to him, as it were, from above; but his work is not merely to obey and to imitate, nor even only to "speed the process of nature," but to bring something peculiarly his, some element of himself, to unite with that other living entity, the material between his hands. Otherwise this relation does not exist; the material is indeed "dead," and he himself no more than a copyist. The gold of the alchemist was not the same as natural gold; it was "living" gold. He added something even to the noblest of metals by his active relation with it.

Perhaps we could paraphrase what Coomaraswamy has said of art and religion, and say that "craft is alchemy, alchemy craft, not related, but the same." For the craftsman as well as the alchemist knows that his central task is the creation of himself, the artisan; and it is above all for this aim that he strives with endless patience, "separating the subtle from the gross, softly and with great care," to make what his hands touch turn to gold.

Based on a chapter from the forthcoming book A Way of Working, *ed. by D.M. Dooling. Anchor Books/Doubleday.*

*Latin *patiens,* from *pati,* to suffer.



NOTES

1. M.L. von Franz, *Patterns of Creativity Mirrored in Creation Myths* (New York: Spring Publications, 1972), pp. 90-1.

2. Mircea Eliade, *The Forge and the Crucible: The Origins and Structures of Alchemy* (New York: Harper & Row, 1971), p. 79.

3. *Ibid.,* p. 159.

4. Camara Laye, *L'Enfant Noir,* quoted by Titus Burckhardt, *Alchemy* (Baltimore: Penguin Books Inc., 1971), p. 151.

5. Burckhardt, *Alchemy,* pp. 72-73.

6. Thomas Vaughan, *Lumen de Lumine,* ed. A.E. Waite (London: John M. Watkins, 1910), P. 49.

7. *The Art in a Craft* is available from Traditional Studies Press, Box 984, Adelaide St. P.O., Toronto, Canada M5C 2K4. Hand bound cloth edition $10.00, paper $4.95.

EPICYCLE

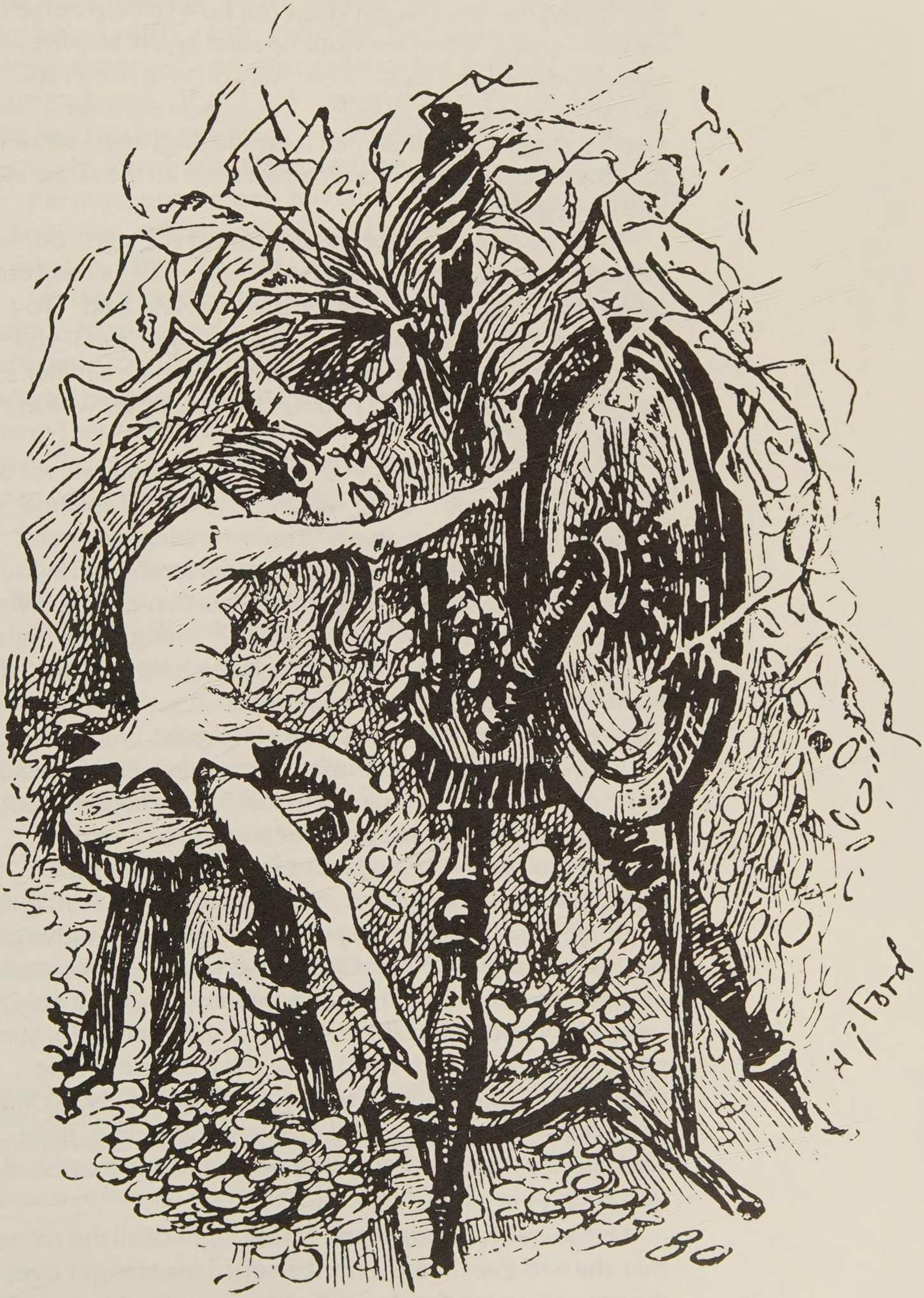
Rumpelstiltskin

The tale of the dwarf who makes a bargain with a maiden is known throughout Europe. In the Grimm's version below, Rumpelstiltskin is the name to guess, but in England it is Tom-Tit-Tot; elsewhere the dwarf is known as Titeliture, Ricdin-Ricdin, and Dancing Vargaluska.

Once there was a miller who was poor, but who had a beautiful daughter. Now it happened that he had to go and speak to the King, and in order to make himself appear important he said to him: "I have a daughter who can spin straw into gold." The King said to the miller: "That is an art which pleases me well; if your daughter is as clever as you say, bring her to-morrow to my palace, and I will put her to the test."

And when the girl was brought to him he took her into a room which was quite full of straw, gave her a spinning-wheel and a reel, and said: "Now set to work, and if by to-morrow morning early you have not spun this straw into gold during the night, you must die." Thereupon he himself locked up the room, and left her in it alone. So there sat the poor miller's daughter, and for the life of her could not tell what to do; she had no idea how straw could be spun into gold, and she grew more and more frightened, until at last she began to weep.

But all at once the door opened, and in came a little man, and said: "Good evening, Mistress Miller; why are you crying so?" "Alas!" answered the girl, "I have to spin straw into gold, and I do not know how to do it." "What will you give me," said the manikin, "if I do it for you?" "My necklace," said the girl. The little man took the necklace, seated himself in front of the wheel, and whirr, whirr, whirr, three turns, and the reel was full; then he put another on, and whirr, whirr, whirr, three times round, and the second was full too. And so it went on until the morning, when all the straw was spun, and all the reels were full of gold. By daybreak the King was already there, and when he saw the gold he was astonished and delighted, but his heart became only more greedy. He had the miller's daughter taken into another room full of straw, which was much larger, and commanded her to spin that also in one night if



she valued her life. The girl knew not how to help herself, and was crying, when the door opened again, and the little man appeared, and said: "What will you give me if I spin that straw into gold for you?" "The ring on my finger," answered the girl. The little man took the ring, again began to turn the wheel, and by morning had spun all the straw into glittering gold.

The King rejoiced beyond measure at the sight, but still he had not gold enough; and he had the miller's daughter taken into a still larger room full of straw, and said: "You must spin this, too, in the course of this night; but if you succeed, you shall be my wife." "Even if she be a miller's daughter," thought he, "I could not find a richer wife in the whole world."

When the girl was alone the manikin came again for the third time, and said: "What will you give me if I spin the straw for you this time also?" "I have nothing left that I could give," answered the girl. "Then promise me, if you should become Queen, to give me your first child." "Who knows whether that will ever happen?" thought the miller's daughter; and, not knowing how else to help herself in this strait, she promised the manikin what he wanted, and for that he once more spun the straw into gold.

And when the King came in the morning, and found all as he had wished, he took her in marriage, and the pretty miller's daughter became a Queen.

A year after, she brought a beautiful child into the world, and she never gave a thought to the manikin. But suddenly he came into her room, and said: "Now give me what you promised." The Queen was horror-struck, and offered the manikin all the riches of the kingdom if he would leave her the child. But the manikin said: "No, something alive is dearer to me than all the treasures in the world." Then the Queen began to lament and cry, so that the manikin pitied her. "I will give you three days' time," said he; "if by that time you find out my name, then shall you keep your child."

So the queen thought the whole night of all the names that she had ever heard, and she sent a messenger over the country to inquire, far and wide, for any other names

that there might be. When the manikin came the next day, she began with Caspar, Melchior, Balthazar, and said all the names she knew, one after another; but to every one the little man said: "That is not my name." On the second day she had inquiries made in the neighborhood as to the names of the people there, and she repeated to the manikin the most uncommon and curious. "Perhaps your name is Shortribs, or Sheepshanks, or Laceleg?" but he always answered: "That is not my name."

On the third day the messenger came back again, and said: "I have not been able to find a single new name, but as I came to a high mountain at the end of the forest, where the fox and the hare bid each other good night, there I saw a little house, and before the house a fire was burning, and round about the fire quite a ridiculous little man was jumping: he hopped upon one leg, and shouted:

"'To-day I bake, to-morrow brew,
The next I'll have the young Queen's child.
Ha! glad am I that no one knew
That Rumpelstiltskin I am styled.'"

You may imagine how glad the Queen was when she heard the name! And when soon afterwards the little man came in, and asked: "Now, Mistress Queen, what is my name?" at first she said, "Is your name Conrad?" "No." "Is your name Harry?" "No."

"Perhaps your name is Rumpelstiltskin?"

"The devil has told you that! the devil has told you that!" cried the little man, and in his anger he plunged his right foot so deep into the earth that his whole leg went in; and then in rage he pulled at his left leg so hard with both hands that he tore himself in two.

From THE COMPLETE GRIMM'S FAIRY TALES, by Jakob Ludwig Karl and William Karl Grimm, translated by Margaret Hunt and James Stern. Copyright 1944 by Pantheon Books, Inc. and renewed in 1972 by Random House, Inc. $12.95, paper $5.95. Reprinted by permission of Pantheon Books, a Division of Random House, Inc.

The Two Sciences of Medicine

by Jacob Needleman

> The physician should speak of that which is invisible. What is visible should belong to his knowledge, and he should recognize the illnesses, just as everybody else, who is not a physician, can recognize them by their symptoms. But this is far from making him a physician; he becomes a physician only when he knows that which is unnamed, invisible and immaterial, yet efficacious.
>
> ...Medical science...is full of mysteries, and must be studied like the words of Christ.[1]
>
> —PARACELSUS

The writings of the incomparable sixteenth century physician and alchemist, Paracelsus, are invaluable to us if we would inquire about medicine as an ancient and sacred science, thereby reaching for a fresh perspective from which to view both the spectacular successes and failures of modern medical science. Never forgetting, of course, that our main aim is to look for a bridge between the great knowledge of the archaic past and the exigencies of the present.

Addressing his fellow physicians, Paracelsus writes further:

Health and sickness are granted by God; nothing comes from man... You should divide the diseases of men...into those which arise in a natural way, and those which come upon us as God's scourges. For take good note of it: God has sent us some diseases as a punishment, as a warning, as a sign by which we know that all our affairs are naught, that our knowledge rests upon no firm foundation, and that the truth is not known to us, but that we are inadequate and fragmentary in all ways, and that no ability or knowledge is ours.[1]

I think it is well to begin our discussion with these passages, which may strike the modern mind as not only fanciful, but outrageous. They smack of superstition, false consolation, and the sort of passivity which prevents effective action. Nevertheless, such thoughts must at one time or another have crossed the minds of many persons who have suffered from serious illness and many physicians whose sustained efforts to help have failed.

As medicine struggled to find a place among the exact sciences in the modern era, it quickly backed away from the idea that diseases have a meaning. Just as science in general viewed the universe as a blind chain of processes, so the body was also viewed in this way. Just as the mission of science was to ascertain the laws of nature in order to intervene and satisfy the desires of men, so medicine became progressively interventional. While many individual doctors continued to rely in part on a sort of intuition and on a general impulse to "flow with nature" intelligently in times of physical

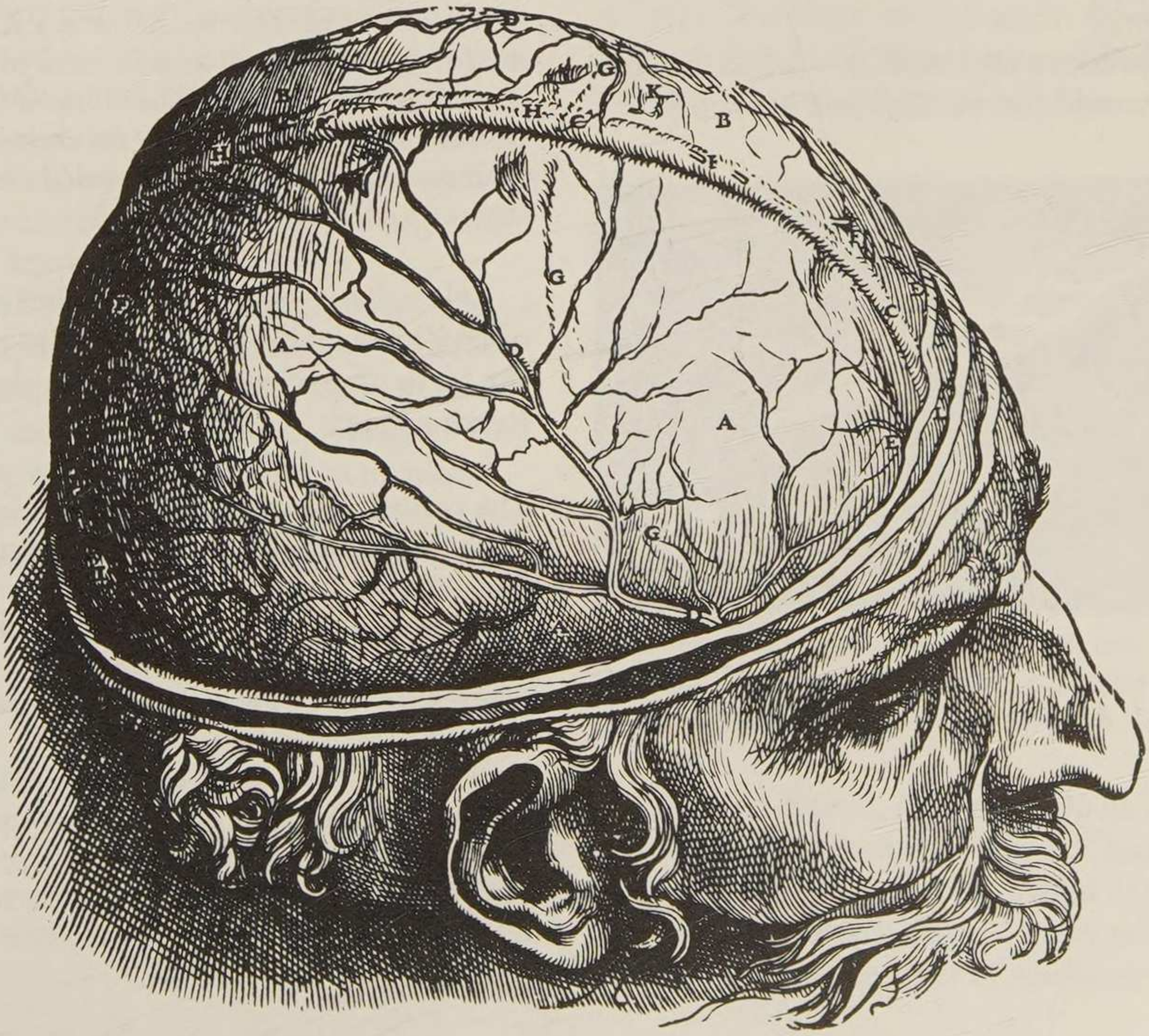
crisis, the general trend of medicine was in the opposite direction.

All of this was part of a general "humanistic" rejection of the idea that man is weak and helpless before the great forces of nature. But in the modern era the traditional notion of man's helplessness had become badly misinterpreted. In the ancient teachings it is held that the more man sees of his weakness, the more possible it becomes for a greater force to work through him. In this sense, "sin" is the tendency of man to willfully remain established in a part of his being that by itself cannot receive greater energy.

This is an extremely important consideration that can help us break away from what appear to be naive religious-medical formulations in the Western Bible. Expressed in the language of religion, God cannot give to man unless man actively seeks to receive from God. A too literal reading of scripture makes it sound as though diseases are sometimes punishments for disobedience, just as we angrily punish a naughty child. But from the point of view we shall be examining a scourge from God, or anything else from God, only comes to a man who is searching for God—searching, that is, for a greater understanding of his life and a surer contact with higher forces. In short, disease—as well as any other event in a life—has meaning only to men in search of meaning.

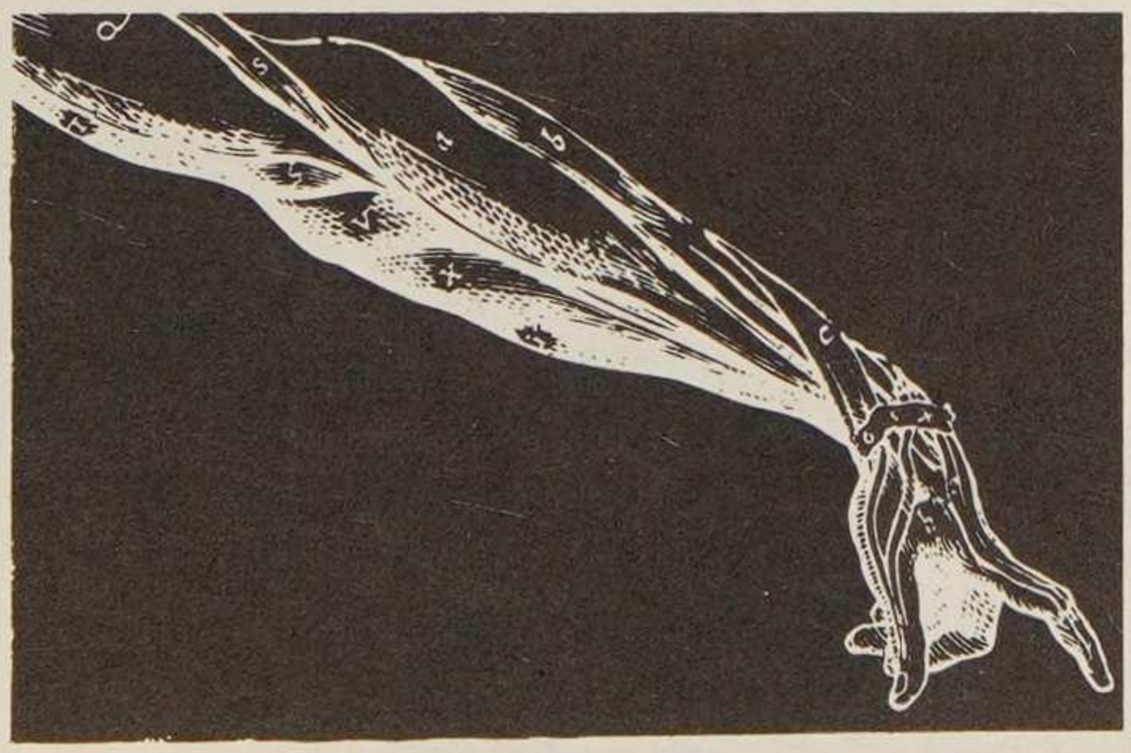
DISEASE AND MEANING

The ecological crisis has taught us that we have been wrong to approach the surrounding world as would-be conquerors, manipulating nature only in order to satisfy all our desires and fears. Carrying our technological discoveries to excess, we provoke from nature responses which now begin to terrify us and which lead us to reconsider the whole metaphysical foundation of modern science.



But what of our bodies? Have we not approached the body in the same way that we have approached the universe—as "conquerors"? For example, is the overuse of antibiotics, as some have claimed, like the abuse of pesticides? the excessive reliance on radical surgery like the plundering of forests, minerals and animal species for the sake of short-range gain?—the constant turning to drugs for symptomatic or emotional relief like the massive diversion of natural energy resources for physical comfort and ease? It would be intellectually very gratifying to say yes to this and to be able to point to the medical equivalent of all the various ecological crises that now face us. But it is not so simple. External nature apparently draws the picture of our errors much more obviously than does our own body. The truth seems to be that we really do not know what we are doing to our bodies. We do not even know what the body is for.

In order to approach this difficult subject, I would like to ask some questions



about the science of medicine as such. They may sound foolish to physicians or knowledgeable historians of medicine. But I'm sure questions like these are troubling many others who are hearing more and more about such non-orthodox medical approaches as homeopathy, acupuncture, herbal medicine and psychic healing.

To start with, there is this whole matter of the origins of modern medicine and the supposed abysmal ignorance of all those who went before. In the year 1543 Nicolaus Copernicus published the epoch-making work, *On the Revolution of Celestial Orbs,* the first modern, mathematical statement of the heliocentric theory. In the same year a remarkable young Belgian professor of anatomy, Andreas Vesalius, published a book entitled *On the Fabric of the Human Body.* Famed as the first real anatomical text based on direct observation of the human cadaver, it contains a series of magnificent illustrations, unsurpassed to this day, of the skeletal, muscular, vascular and neural structure of the body as a whole. According to the eminent historian of medicine, Charles Singer:

> The masterpiece of Vesalius is not only the foundation of modern medicine as a science, but the first great positive achievement of science itself in modern times... The work of Copernicus removed the Earth from the center of the Universe; that of Vesalius revealed the real structure of man's body.[2]

Now let us hear what another historian of medicine says about the period preceding the birth of modern medicine in the Renaissance:

> The period between modern and ancient times (includes) a period of roughly a millennium. During most of these years, civilization was dragged down to a low level and mankind, hopelessly restricted by the authority of the Church, frittered away its existence with war and monastic dreams.
>
> From the fifth to the eleventh century little progress was made in Europe. This epoch, often referred to as the Dark Ages, was a period in history when the higher ideals of European learning were relegated to a very base position

...Both secular and independent learning deteriorated but the greatest stagnation took place in the fields of philosophy and medicine.[3]

These are by no means exceptional quotations. Almost every historical study of Western medicine gives us a picture of medieval man staggering for a thousand years under the weight of blind, ineffectual superstition about disease and the functions of the human body.

I have neither the knowledge nor the wish to dispute the common opinion that during the Christian Middle Ages medical superstition was rampant and that there was very little in the way of experimental verification in these matters. But a thousand years is a very long time and many extraordinary people existed during that period. Forty generations of human beings were born, lived and died; they all had bodies and suffered pain and disease. Are we to believe that the greatest intellects of the Christian era were the pawns of blind superstition about the human body? Even the sharpest critics of the Middle Ages allow that effective remedies of many different kinds abounded and that the immediate concern of the medically trained monks was the relief of their patients' suffering. What is condemned is the lack of scientific obervation and theory as we know it. Then we may ask: did the traditions perhaps shelter another kind of study of the body which we do not even recognize or dignify with the name of knowledge?

It is all part of a larger question: what is it *necessary* to know about the body? Why has medicine always been associated with religion and what we now call magic? Do we really wish to maintain that mankind has been submerged in medical superstition in all epochs and in all cultures with the exception of our own? For let it be noted that even Hippocrates and his school, universally acknowledged as the ancient forerunner of modern empirical medicine, was Pythagorean. To the extent that we trust honest, though external, scholarship in this matter, the famous Hippocratic Oath has been persuasively shown to be a document of fourth century B.C. Pythagoreanism. And among the many intriguing elements in this Oath is the indication that in the school of Hippocrates medicine was taught in a manner resembling the transmission of spiritual knowledge from master to pupil.[4]

In the Hippocratic Oath the first thing to which the physician must swear is "To hold him who has taught me this art as equal to my parents and to live my life in partnership with him." This phrase, coupled with what we may surmise about the spiritual discipline of the Pythagorean school, forces us to reformulate our question. We ask not only what is it necessary to know about the body, but what *kind* of learning is required? In connection with this, we may cite an account of medical education among the ancient Hindus. The author here is the noted Orientalist, Heinrich Zimmer. "Hindu medical lore," he writes, "has been handed down through generations, not by faculties and bodies, colleges or research centers":

> It is the individual transference, as much as learning and being trained to use learning, that counts in the Hindu educational system. Through the intimate personal contact between master and pupil, living for years together in the master's household...the master infuses, as it were, the secret of his personal proficiency and mastery into him. Some kind of transformation is worked on the very substance of the obedient pupil. He has to be turned...into a new vessel which may be filled with the wisdom and the skill of the teacher, and with the ancient spiritual inheritance transmitted through him. It is in this way that true mastership, according to Hindu belief, is handed down through the ages.[5]

This, of course, does not help us very much to understand what kind of learning was required for the transmission of specifically medical knowledge. It only tells us that mastery of the craft of medicine was

intimately bound up with mastery of the sacred teachings, which is to say, mastery of oneself. All the crafts of ancient India, Zimmer goes on to say, were taught in this way and were never meant to serve purely utilitarian or even aesthetic ends. A person became a craftsman—whether a silversmith, a carpenter or a physician—only to the extent that he worked toward the perfection of his own inner being. The outer product, utilitarian though it was, was a result of the inner product, which we may call the formation of a new consciousness. It is along these lines that we may begin to understand the meaning of sacred art and crafts in traditional societies, and not simply in terms of symbolic or aesthetic characteristics of the final product, important though that is.

Are we on the track of discovering the real difference between ancient and modern medicine? Is what seems to us unscientific and crude in early medical systems only a reflection of the difference between science as we understand it today and craft as it was understood in traditional societies? And, importantly enough, were these early physicians good physicians? Unfortunately, it is hard to answer that question because we, at least I, am not so sure what defines a good physician. It is a question many people are now asking, including quite a few concerned physicians themselves.

On this question, the Hindu tradition provides an interesting direction for our thinking. Zimmer recounts a seventeenth century allegorical drama that summarizes the traditional point of view on the place in the whole of human life of the craft of medicine. It is a long tale, but pertinent to our question, and so I should like to present Zimmer's account with a few elements omitted and with a few rephrasings for the sake of clarity.

The setting is the human organism. The kingdom of disease under its king, Consumption, assails the royal capital of the body. *Jiva**, king of the body, is to be driven from his realm.

The commander-in-chief of the army of diseases, Jaundice, heir to the throne, assembles the diseases of every sort for a council of war. The sixty-four diseases of the eye, the eighteen diseases of the nose and ears, the seventy-four diseases of the mouth, and the five diseases of the heart gather round him. These, however, form but a small part of the vast array.

Goitre, as master of ceremonies, opens the debate. Leprosy and Insanity make confident speeches. Boils and Ulcers show bold assurance, and so do the Piles and Urinary Diseases, including Diabetes, as well as the Stones. The host of Dysenteries, vaunting their disastrous impact, get full credit for their efficacy in breaking through the defenses of the body, while the Enlargements of the Spleen boast of their malignant effects, once they have gained access to the enemy's fortress.

Meanwhile a spy, Root of the Ear, has returned from King Jiva's realm, after having gathered intelligence, disguised as a mendicant ascetic. The kingdom of Jiva is already besieged with diseases, he reports. But the king has retired to the innermost fortress of the body, having entered the inner citadel of the heart through the gate of the mind. There he approaches Lady Bhakti (loving devotion to God) in the hope that she will appeal to Siva (God) to grant the king the elixir of immortality, mercury, which is the very seed of God and the cure of all diseases.

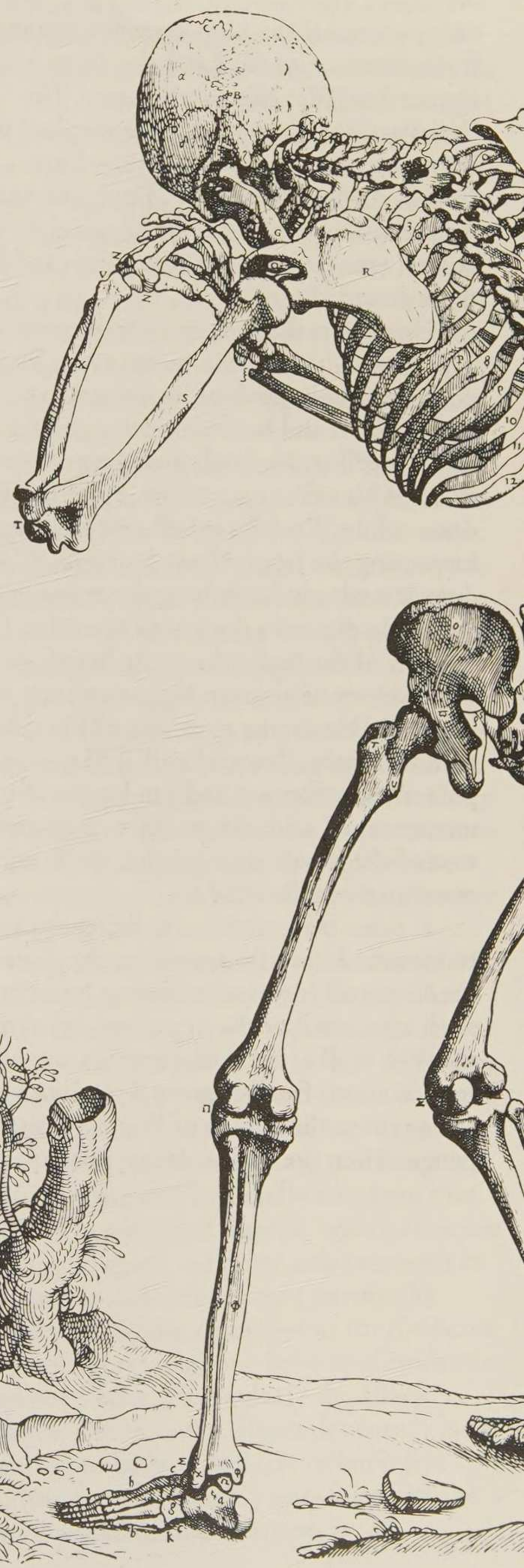
The commanders of the army of diseases plot together on how to disorganize and

*There is no really satisfactory English translation for this term which is so crucial in the Hindu conception of man. Perhaps the best synonym in the present context is "the individual I."

disrupt the order of the king's household. For King Jiva himself is wholly inactive; he depends entirely on his active and circumspect chancellor, Intelligence, who represents extroverted consciousness which wisely attends to the things of the world.

During the crisis, this chancellor has ousted his rival, Spiritual Wisdom, who is unconcerned about worldly matters and to whom the passive king is all too ready to listen. The commanders of the army of diseases consider ways of reinstating Spiritual Wisdom with the king. Being wholly devoted to transcendental truth, his renewed influence could effectively block the strategies of the chancellor who is now managing the whole work of defense. But there are also other possibilities to consider. The chancellor's staff could be disrupted. The proper balance of his main functionaries, the three humors (the body's principle organizing forces) could be upset by wrong diet or by drugs. Or perhaps the Mind, who is under the supervision of Worldly Intelligence, could be thwarted in his attempts to look after the welfare of the king. Fickle by nature, the Mind could easily be distracted by means of the pleasures and pains transmitted through the senses. Indeed, the prospects look excellent for victory by the army of diseases and for the banishment of King Jiva from his domain.

Meanwhile, in the innermost sanctuary of the heart, King Jiva, with Lady Bhakti, has offered his worship to Siva. Siva bestows upon him the powerful drugs of mercury and sulphur which, blended with medicinal herbs, bestows everlasting youth. The king quickly returns to the battlefield of his body, assured of the constant support of Lady Bhakti. The commanders of the attacking armies realize that now that the king is fortified with divine drugs they can



only succeed if the king becomes estranged from devotion to God and also from his chancellor, Worldly Intelligence. The Six Evil Passions, therefore, have sneaked into his realm to cause disturbance—Lust, Greed, Anger, Hypocrisy, Envy and Madness. But Discernment, the king's chief of police, sees through their disguises and has them rounded up.

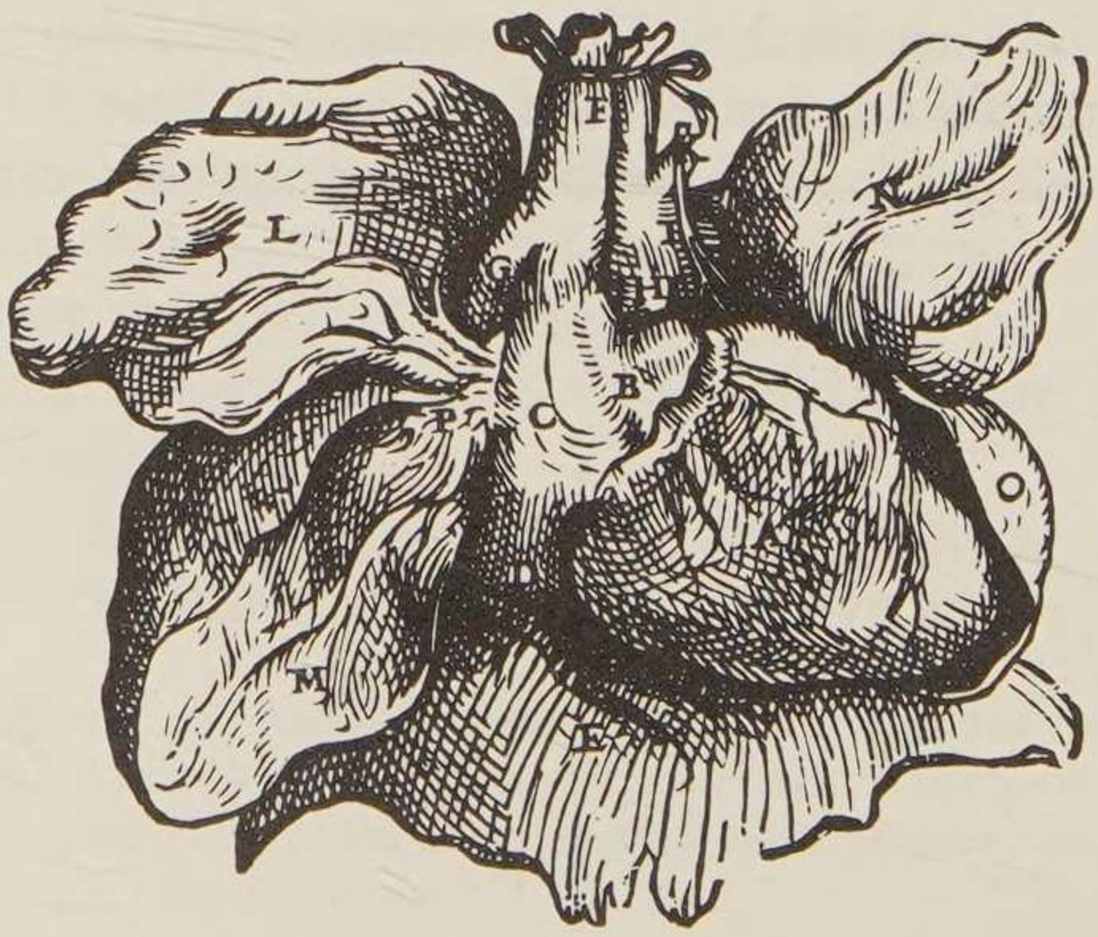
However, the king, now underestimating the peril which still menaces his kingdom, turns too much of his attention to Lady Bhakti and becomes estranged from his chancellor. He lends a willing ear instead to his other counsellor, Spiritual Wisdom, while Worldly Intelligence is away inspecting the lines. Now, Spiritual Wisdom attends exclusively to the transcendental. He distracts the king's attention from the city of the body, directing his view to the mystery of his own higher essence, the imperishable divine principle of life which transcends this "mortal coil." This principle remains, forever and fundamentally, unconcerned with the welfare or destruction of the physical or psychic shells which envelop the individual I.

It takes utter disaster to bring the king to reason. A terrific assault by the diseases, involving all forms of suffering, piercing shell after shell of the organism, breaking through wall after wall, fortification after fortification, finally forces King Jiva to listen again to the advice of Worldly Intelligence. Then the divine drugs, pharmaceutically prepared and mobilized by the chancellor, arrive upon the battleground; in a pitched battle, man to man, they conquer the entire army of diseases.

Broken, King Consumption quits the battlefield. Yet in a last ditch attempt, he hurls the group of incurable diseases in a surprise attack. But in vain. Worldly Intelligence immediately advises the king to return to Lady Bhakti for the practice of yoga meditation, even though her influence had previously been too great upon the king. But this time, Siva, God, manifests Himself to the king to bestow upon him the perfect wisdom of yoga, the true knowledge of the essence of God and the Self, which removes the king from all suffering and lifts him beyond all mortal cares. The king experiences the beatific identity of God with the innermost core of man's nature. Finally, Siva imparts to King Jiva this teaching:

"Do not cease striving after the supreme enlightenment which bestows release from the bondage of the round of birth and death. Yet, at the same time, honor the wisdom of perfect worldly life and follow it. In giving to each sphere, the secular and spiritual, its due share, you will achieve both perfect enjoyment of earthly delights and final release. For only in so far as the city of the organism is maintained and firmly defended, can Yoga unfold its magic power to the fullest degree conducive to the plenitude of transcendental bliss."

Zimmer comments on how this drama (which is far more complex than here outlined) summarizes the vast material of the Hindu medical systems, physiology, dietetics, therapeutics, and so forth. But, he says,



at the same time, a dramatic display of allegorical figures assigns to medical knowledge its proper place within the wider sphere of spiritual discipline which aims at the highest goal of man.

> It (the drama) seeks to coordinate the physician's and the layman's attention to physical well-being with the goals of faith, devotion and yoga practice, the striving toward the beatific experience of the divine in human nature. Health, vigor and longevity, though their possession naturally is of vital interest, do not constitute the self-sufficient ends of medical discipline. They are not ultimate values. They are subordinated to the higher goal of fulfillment on the transcendental plane...
>
> The moral of this medical allegory is that man must reconcile the antagonistic tendencies of his earthly individual nature and of his divine transcendent essence by satisfying the antithetical claims of both spheres, the natural and the supernatural: the phenomenal realm of body and psyche, and the imperishable essence which forms man's inherent being.[5]

It is true that the literature of the Christian Middle Ages seems to offer nothing comparable to this exact placing of the function of the medical art in terms of balancing the two natures of man. Nor am I aware of any indications in medieval times of a school of medicine corresponding to the apparently Pythagorean school of Hippocrates in ancient Greece where, let us surmise, the craft of medicine was studied as an instrument of both inner development and external service. There are some who say the Benedictines and a few other monastic orders pursued medicine somewhat along these lines. In any case, the general impression is that, both within the monasteries and outside of them, disease was looked upon as an affliction sent by God either to test man's soul or to punish him. If the Hindu drama urged men to attend wisely to their bodies for the sake of their soul, the medieval Christian message was the reverse: man must not forget that all things, including health and illness, come from God and that in the last analysis only a right relationship to God can bring man any real good, physical or otherwise. Apparently, in the East, cultural religious practices sought to correct the tendency of men to retreat into "spirituality" without caring rightly for the bodily nature. In the West, clearly, religious practice had the opposite task: to prevent men from attending to the body in such a way and with such an attitude that they forgot God. Excessive preoccupation with one's inner divinity was apparently not the central problem in the civilization of the West.

The perennial association of medicine and "religion" or "magic" throughout the ages must thus be understood in two ways. On the one hand, the craft of medicine was studied as a branch of the Spiritual Path, that is to say, as a means for self-perfection in the light of its teachings and disciplines. On the other hand, medicine was studied and practiced at large as part of a culture's religion, that is to say, as one of the means for stabilizing and ordering the general life of a society. We shall return to this distinction which suggests that throughout the ages there has existed an inner and an outer side to the art of medicine.

But in order to think further about this whole subject it is first necessary to chase away or at least confront one demon in our own minds that stands in the way of finding a wider perspective. I mean the above-mentioned assumption about the vast superiority of modern medicine over anything that went before, and especially anything that existed in medieval Europe. Many of us are willing to grant the great achievements in art, music and architecture during the Christian Middle Ages, but as for medicine the strongest image we have is of epidemic and pestilence, particularly the Black Plague which in the fifteenth century is estimated to have wiped out twenty-five million people, roughly one-fourth of the entire population of Europe.

Our high estimation of modern medical science does rest largely on its success in combating infectious epidemics. We in the modern, technologically-based world no longer stand in dread of plague, typhus, typhoid fever and other diseases which have ravaged Western civilizations in the past. But in *Mirage of Health*, one of the sanest books ever written about disease and health, René Dubos has observed that, "while modern science can boast of so many startling achievements in the health fields, its role has not been so unique and its effectiveness not so complete as is commonly claimed." In reality, he writes:

> the monstrous specter of infection had become but an enfeebled shadow of its former self by the time serums, vaccines, and drugs became available to combat microbes. Indeed, many of the most terrifying microbial diseases—leprosy, plague, typhus, and the sweating sickness, for example—had all but disappeared from Europe long before the advent of the germ theory.[6]

Equally important, our own apparently impressive longevity statistics rest, Dubos tells us, on the marked decrease in infant mortality (due, again, largely to improvement over nineteenth century standards of nutrition, sanitation and social conditions).

That is, more people grow to adulthood nowadays, so the average life span figures out arithmetically to be longer. But whether these adults themselves enjoy better health or live longer is another question.

Moreover, we have our own epidemics and "plagues," apart from the obvious, recognizably infectious diseases. Future historians may well look back upon our era and think of cancer, heart disease, hypertension and mental illness in much the same way we think of the pestilence of the Middle Ages.

Because of the modern attitude toward death, we tend to judge the effectiveness of medical science mainly in terms of prolongation of life in the face of dramatic, acute mortal diseases. And, as we have seen, even with this criterion, it is not certain that we are better off than our ancestors. But once we widen our criterion to include some of the other countless factors involved in the meaning of health, our situation begins to look even more questionable. It is true, Dubos observes, that we have cleared away much of the filth and vermin that nurtured the killing diseases of the past few centuries. But, he writes, we are as much as ever prey to illnesses "which do not take life, but just ruin it and which we can neither diagnose nor cure." These chronic diseases, such as bronchitis, "do not have the blood-curdling character of the great pestilences of the past." And for this reason they are often ignored in our thinking about the successes of medicine. But Dubos argues that in terms of prevalence in our population and in terms of their indirect contribution to mortality, especially in older adults, many of them can be regarded as longstanding epidemics of the modern world.

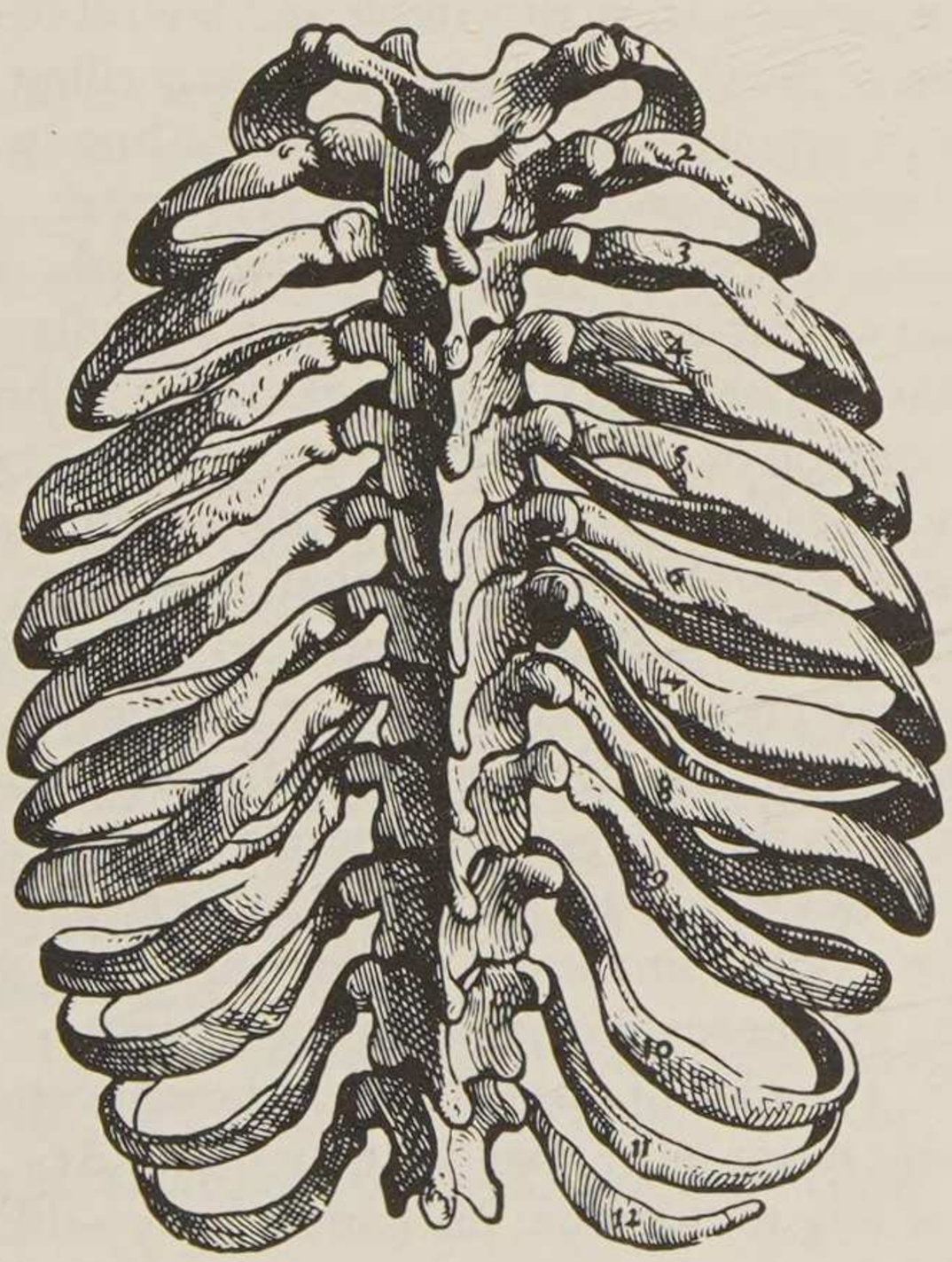
And for every pathogenic microbe that we have for the time being controlled, there are other elements that we are introducing into our physical environment whose effects upon our health are as yet unmeasured or invisible: "We poison our atmosphere, and endanger future generations as well, with the gases of chemical processes, the smoke of factories, the pulverized rubber and exhaust of motor cars, and man-made radiations."

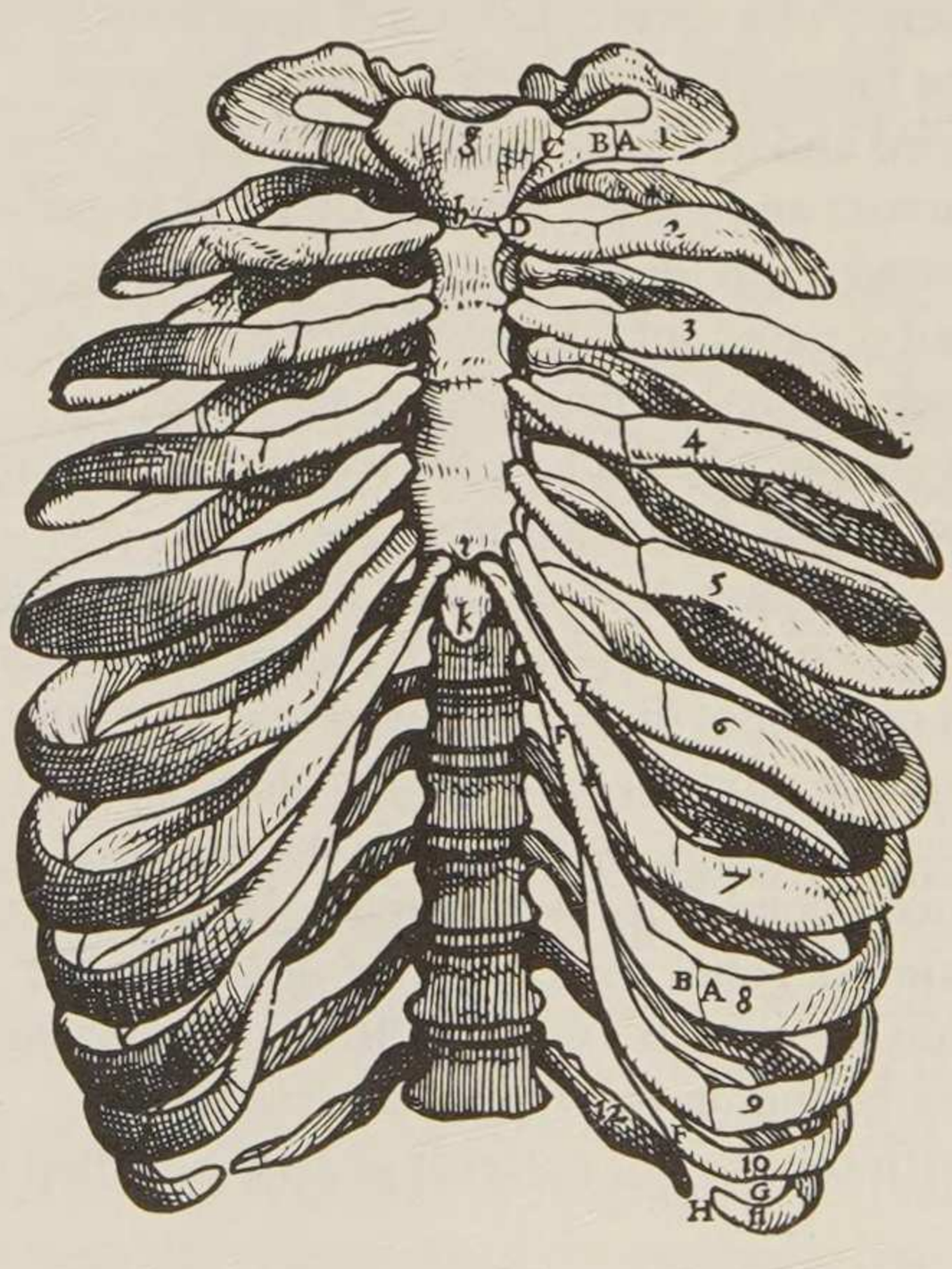
Men are naturally most impressed by diseases which have obvious manifestations, yet some of their worst enemies creep on them unobtrusively. For example, any significant addition to background radiation increases the mutation rate of all life's creatures from plant to man,

with results that will not be felt for several generations. And, likewise, the continuously mounting pollution of the air and the inescapable contact with drugs and chemicals that are becoming part of everyday life carry threats which are less obvious than cancer or heart disease but at least as important.[6]

It is not my intention to summarize all the considerations by which Dubos, himself a famous research physician, throws into question the common opinions about medical progress. He wrote this book several years before all of the sciences began to come under general suspicion, and now one could very well add even to his list of factors; for example, he does not even mention what are called iatrogenic diseases, diseases caused by medical treatment itself, which are ranked third in importance among all the recognized ailments of contemporary man; nor does he directly consider, except in passing, that modern technological progress has drastically lowered the overall level of functioning that we feel is necessary for a normal life. It is very possible that physicians of the distant past might look upon our society of tolerably healthy, reasonably functioning individuals as a world of semi-invalids. Just as we might not be very impressed by the health of an individual who was able to walk through life only if he had a steady diet of tranquilizers or a weekly trip to a kidney-machine. Let us recall that certain long-lived experimental animals often perish rather quickly the moment their artificial supports are removed and they have to fend for themselves in the same environment as their wild cousins.

But by far the most telling point which Dubos makes is one which also leads us back into our question about the relationship between religion and medicine. To say simply that he emphasizes the *social* as well as the vast and interconnected array of physiological factors in the causation of disease may sound like a cliché to most of us who are used to hearing tedious messages about public hygiene and preventative medicine—the



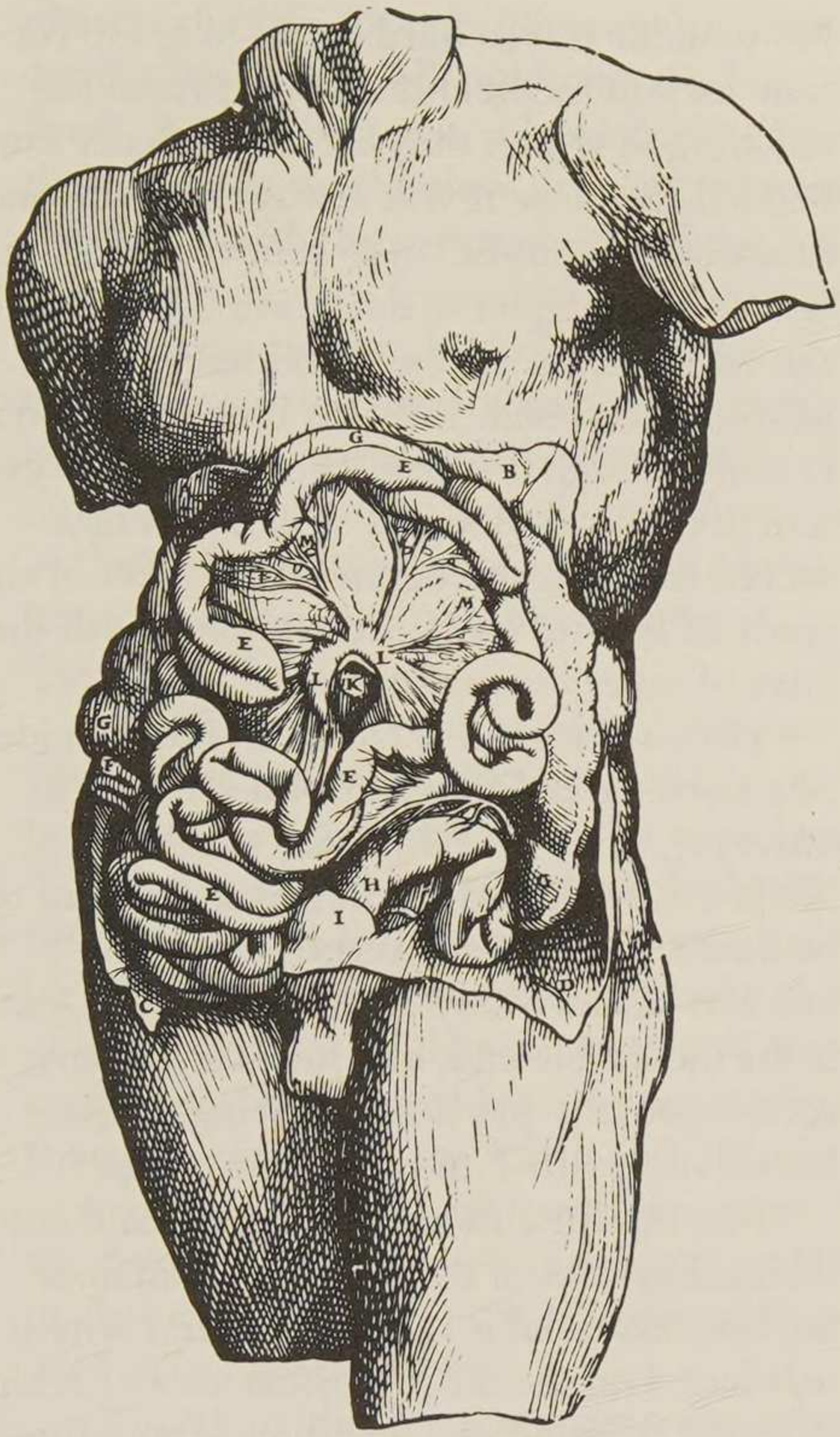


very words have long grey beards growing on them. But we may begin to take notice as soon as we realize even a few of the factors that make up the structure of the social order. This includes everything a society values, the conception of human relationships, the meaning of the family, the degree of competitiveness which is fostered, the psychological states which are considered tolerable or intolerable (such as boredom, guilt, cheerfulness, grief, emotional expressiveness, and so forth), the relationship to money and material goods, the standards of beauty and proper dress. Of course, these are only a handful of the factors that may immediately come to mind. And we must note that we are not speaking here simply about conventionally recognized psychosomatic effects such as ulcers and coronary attacks. All the factors that enter into the intellectual, emotional and economic ambience of a society call forth responses from the human body which are mainly unnoticed and habitual. At the same time, these factors and the patterns of living that gather round them lead to contact with chemical and organic substances that enter into the body or that in many other ways have a pronounced effect on the harmonious functioning of the organism.

We have already cited the contact with hydrocarbons and certain atomic radiations as one effect of the modern sense of values and the modern conceptions of nature and our place in it. In the previous century, the social conditions were such as to allow certain microbes their pathogenic influence; thus the diseases which afflict a civilization are bound up in an intimate, causal way with the overall patterns of living, which in turn are connected to the ideas and ideals which shape the whole social process in any given era. Therefore, insofar as what we are calling religion is the principal factor in organizing and stabilizing the structure of a civilization, then the practice of medicine can never be independent of religion. The impression one has of the practice of medicine in previous epochs and cultures is that, on the whole, physical healing was never administered without some connection being made to the sense of values, the sense of the meaning and purpose of life, which suffused the culture.

Therefore, the principal concept of disease which all pre-modern medicine shares (whether Eastern or Western) is that it is the result of a community's failure to live according to the whole truth about the purpose of human life on earth. Traditional, religious language often symbolizes this conception by speaking of a time, long, long ago, when disease did not exist. Thus according to the Hindu scriptures, bodily disease was unknown in the previous cycles of man's existence on earth. In short, what we are speaking of here is the idea, expressed repeatedly in the Western Bible, that *disease is a punishment,* an inevitable and lawful result of mankind's failure to live according to its destiny—that is to say, according to its structure and possibilities. It is rather clear, in what we call "primitive" medicine (for example, among the American Indians) that disease is very often regarded as a phenomenon of society. Thus, the healing methods for certain specific diseases intimately involved the participation of the tribe, which I think anthropologists wrongly interpret and explain solely in terms of the psychological "support" offered by the tribe to the sick person. There are certain diseases which are understood in terms of the whole community's failure to attend to the higher level in its ways and actions.

The idea of disease as punishment contains much more than we may think. According to this idea, the human body—like the geocentric earth—is implicated in a vast network of forces and influences, the most important of which can be neither activated nor perceived in man's fallen state of awareness. If there is such a thing as a

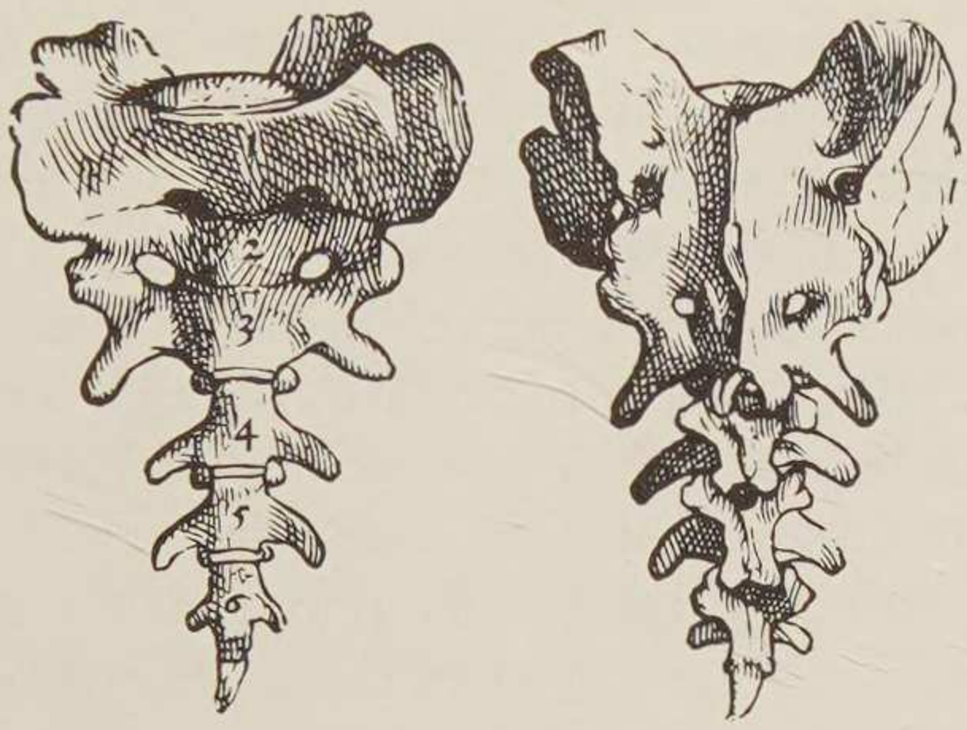


religion which emanates from a universal level of understanding, such a religion must surely establish the patterns of communal life in full knowledge of the structure of the human organism conceived in this way. Did the founders of the great religious traditions have such knowledge? If so, in what way was it communicated to the masses of mankind? That is, are there conceptions about the nature of the human body which require a definite psychological preparation in the same way that certain ideas about the cosmos may require a degree of psychological maturity that is not given to us, but which must be worked for?

I cannot claim to know what knowledge about the human body the founders of the great traditions possessed. Nor can I claim to know where, exactly, the line may have been drawn between an inner and an outer system of medicine in traditional societies. It is a fact that the medical texts that have come down to us from ancient times contain a puzzling mixture of recognizably scientific knowledge and what we call "magical" ideas about "spirits," "demons," and odd-sounding ritual practices. The medical texts of ancient Egypt and China illustrate this paradox very clearly. For example, the famous Smith Papyrus of Egypt, which is said to date back to 2500 B.C. (though it may have been a copy of a *far older* document) contains a vast store of anatomical and physiological knowledge that utterly astonished investigators when the first translations were made. Here are a few abridged lines from the First Instruction of the Smith Papyrus:

> ...measuring is when you count anything with the *ipt* measure. The counting of anything with the fingers (is done) to recognize the way the heart goes. There are vessels in it leading to every part of the body...When a Sachmet priest ...puts his fingers to the head...to the two hands, to the place of the heart...to the two legs, then he is measuring the heart...it speaks... in every vessel, every part of the body...one measures the vessels of his heart to learn the information that is given by it.[7]

The famous Egyptologist, J. H. Breasted, saw this passage as an indication that the ancient Egyptian physicians not only knew about the pulse as a diagnostic measure, but he also claimed they were on the verge of discovering the circulation of the blood (which is conventionally thought to have been unknown until the seventeenth century). We will probably have to await new breakthroughs in understanding the meaning of ancient Egyptian writings before being able to assess the full range of medical knowledge they possessed. And such breakthroughs will almost certainly depend not on the talents of the cryptographer, but on a deeper understanding of the symbolic language in the Egyptian teachings. What we call primitive, magical language may well be symbols of universal forces expressed in ways that could guide the faculty of intuition in the priest-physician.



MEDICINE AND THE TWO FORCES

Because the ancient teachings saw the cosmos as a conscious harmony of energies, the idea that man is subject to all the forces of creation served as a call for self-examination to individual men. In Chinese medicine, as in many other ancient systems, disease was understood as the result of interference with this constantly shifting harmony of forces. The enemy to be feared was not nature, but man's insensitivity to the forces at work in him. Such a sensitivity by which man could move with the whole of moving nature is, however, a property of microcosmic man, perfected man. The hard conclusion is that what the universe cares for in individual man is only for the perfecting of the microcosm. Great Nature is the enemy only of the man who is the enemy of his own perfecting.

The first task of man, therefore, was not to compel nature to make him comfortable, but to witness in himself more of her laws. No wonder it is so hard for us to grasp certain ancient medical texts apart from the teaching in which they were originally embedded. Because it was always the external function of a physician to relieve suffering where called upon to do so, we assume that the whole of ancient medical science was geared to this end. But that is not necessarily true, though it is true of our modern system of medical thought. When part of a sacred teaching, medicine is an aspect of the study of how to live in accordance with the laws of inner evolution.

How far this all is from our modern idea of a universe indifferent to life! In such a universe, to be sure, the very existence of life is a miracle and sickness is something to be hated. In a lifeless cosmos, life as we know it has nowhere to go but down. Death is the inevitable end, and suffering of any sort, especially physical suffering, is the herald of death. Time is a "grim reaper."

Staying for a moment with the ancient Chinese system of medicine, we can now see how essential it is to understand why it was based on the metaphysical idea of reality as the meeting and blending of two fundamental energies. Many Westerners are now familiar with the terms *yin* and *yang* and with the sacred diagram by which the teachings of ancient China indicate that every existing thing is the result of the meeting and harmonizing of these two forces. However, the history of modern medicine turns away completely from the effort to understand the relationship of these forces. Just prior to the intellectual triumph of modern scientific medicine, much medical thinking was based on the idea of a natural healing force, a force of life operating in the human body which when left to itself or gently assisted would restore the organism to health. Known as *vitalism,* this concept of a life-force in nature was ultimately rejected as unscientific and sentimental, just as the modern scientific mind rejected the whole Romantic view of nature. Modern science understood the universe instead as tending toward maximum entropy. The central energy of the universe was the energy of death.

Nowadays, we are witnessing a renewed interest in medical systems that em-

phasize the life-force—homeopathy, naturopathy, so-called folk medicine, and so forth. As part of a general reaction against the scientific world view, it overlaps considerably with the turning toward the religions of Asia. But from the perspective of the Chinese system, both the vitalistic and the mechanistic views of nature are partial and lopsided, being equally expressions of our modern inability to understand energy as the movement between levels, and phenomena as the result of the meeting of "vertical" forces.

It is surely an error to regard the yin-yang of ancient China as representing opposing forces that remain on the same level. To do this is to project our own dualistic thinking onto a form which was, one may be sure, intended to communicate the idea of unity. It must be that the ancient Chinese understood one sort of force as descending from the cosmos to the Earth and the other as *ascending from the Earth toward the cosmos*. If so, then the famous yin-yang diagram tells us that *reality, or the Tao, is a blending of an upward and a downward force.*

This is an idea of tremendous magnitude which can show us not only that it was once possible to base the science of medicine on real metaphysics, but also how what we have said about the universe must also be true of the human organism—that it is like a teaching which "must be studied like the words of Christ." So, let us go into this idea a little further, setting aside for now the usual associations we bring to the translations of "yin" and "yang" (such as "feminine-masculine," "darkness-light," "active-passive," etc.).

The following expression of the laws of universal forces is from the writings of Chu Hsi, the great sage of twelfth century China:

> The Supreme Pole (the ultimate principle of the universe) moves and produces the Yang. When the movement has reached its limit, rest ensues. Resting, the Supreme Pole produces the Yin. When the Rest has reached its limit, there is a return to motion. Motion and rest alternate, each being the root of the other. The Yin and Yang take up their appointed functions, and so the Two Forces are established.
>
> The Yang is transformed by reacting with the Yin, and so water, fire, wood, metal and earth are produced. Then these (the Five Elements) diffuse harmoniously, and the Four Seasons proceed on their course.
>
> The Five Elements if combined would form Yin and Yang. Yin and Yang if combined would form the Supreme Pole...
>
> The true principles of that which has no opposite, and the essence of the Two Forces and the Five Elements, react with one another in marvelous ways, and consolidations ensue. The Tao of the heavens perfects maleness and the Tao of the earth perfects femaleness. The Two Elements of maleness and femaleness, reacting with and influencing each other, change and bring the myriad things into being. Generation follows generation and there is no end to their changes and transformations.
>
> It is man alone, however, who receives the finest substance and is the most spiritual of beings. After his bodily form has been produced, his spirit develops consciousness....[8]

Elsewhere in the writings of Chu Hsi, a pupil asks: "Is expansion positive spiritual force and contraction negative spiritual force?" Chu Hsi answers by drawing a circle on the desk and pointing to its center:

> Principle is like a circle. Within it there is differentiation like this. All cases of material force which is *coming forth* belong to yang and are positive spiritual force. All cases of material force which is *returning to its origin* belong to yin and are the negative spiritual force.[9]

Recalling that in the language of ancient man, movement downward equals movement outward, and movement upward equals movement inward, we have here a universe in process where all things are created, sustained and transformed by the harmonization of opposing vertical forces. There is a force which proceeds outward or downward from the highest reality and an-

other force, also originating in the "highest," which ultimately resists the downward movement by returning to its source.

As scientists, we say that the universe is indifferent to human need and we often cite the laws of physics to prove our point. But when Newton formulated the laws of motion, he was offering conceptual schemes that described the universe only as it appears to man in the ordinary state of consciousness—man, that is, who is not in direct contact with the higher energies that circulate within himself and the cosmos. And it is true that ordinary sense-perception presents us with a world that can be described largely by forces acting laterally, "horizontally." From the ancient perspective, however, the concept of forces acting laterally is an abstraction, a narrow perception of the whole. The ancient idea that everything in nature is in movement refers above all to vertical movement and only secondarily, if at all, to lateral movement understood as perceptible change without change in the quality of being.

It must be added that for ancient man the laws that govern the passage of energies from "heaven" to "earth" and back are as inexorable and impersonal as the laws of physics. It is not that the cosmos is indifferent to human desire, but that human desire has become, so to say, indifferent to the cosmos.

In any case, the implicit concept of lateral force led scientists of the last century through the paces of searching for a perpetual motion machine. When this failed, the notion of increasing entropy was invented, so that what we were given was a universe which for most practical purposes we could still regard as "horizontal," but which for theoretical purposes we must regard as a little bit vertical and downward-directed. The ancient idea of a "life-force" had already been flattened out to mean a force which maintains an organism instead of a force which constantly transforms all entities by either the process of disintegration (death) or the process of perfection (life), both processes being necessary to each other and, as it were, one "feeding" off the other. Naturally, the modern, flattened version of the idea of a life-force seemed sentimental, being the metaphysical projection of a psychological fear.

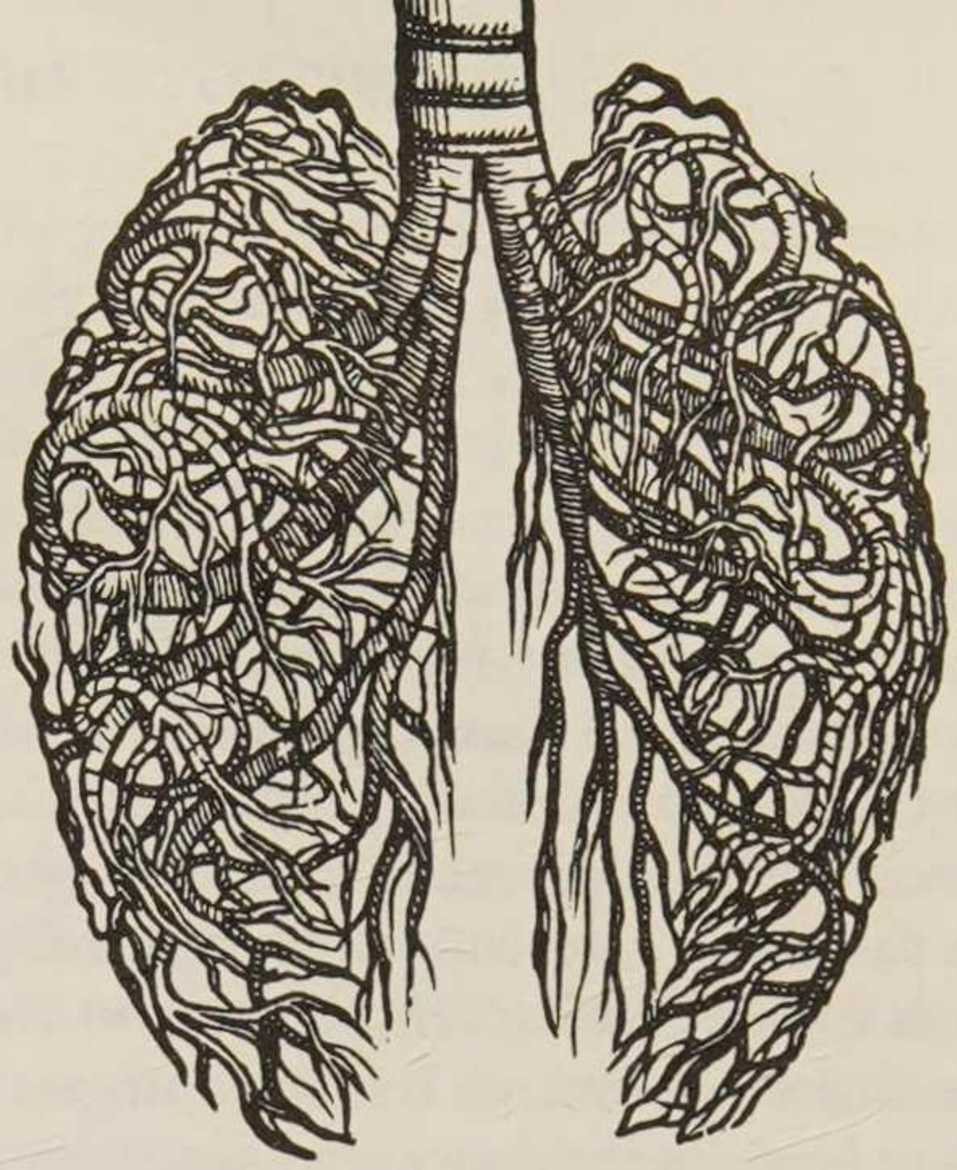
Thus, the ancient Chinese system of medicine understands the healthy human being as a "little universe" containing and harmonizing the entire reach of the two fundamental processes of the great universe. For man, therefore, the life-force cannot operate automatically but requires that he bring into harmony all the energies at his disposal, including of course the energies which lie at the source of what is named intellect, will, conscience and consciousness. This is the metaphysical basis of the idea, expressed in varying ways in various traditions, that disease is a "punishment" from God. This "punishment" has nothing at all to do with our literal understanding of the word. It refers mainly to the inevitable results of man's unwillingness or inability to attend to all the energies within him.

Nor does it mean that all disease must be countered by direct efforts of the will, as has often been claimed. It is extraordinary how much stupidity we have attributed to men whose psychological and moral teachings we acknowledge to spring from a nearly miraculous source of wisdom. An exceptionally important matter is at stake here concerning the complexity of man and the nature of his relationship to that complexity, and concerning above all the transcendent spiritual function called "common sense." In the great teachings, man is many things. There *are* functions in him that are relatively automatic; he *is* in certain aspects

a mere animal; and therefore there are diseases (and much else) which do not require him to think, feel, or act in extraordinary ways. Sometimes, he needs ordinary help from ordinary men; sometimes he needs miraculous help from miraculous sources. Some diseases are, as it has been called, "natural" in their causation; others, in the words of Paracelsus which we have already cited, are "sent by God as a punishment, as a warning, as a sign by which we know that all our affairs are naught, that our knowledge rests on no firm foundation, and that the truth is not known to us, but that we are inadequate and fragmentary in all ways, and that no ability or knowledge is ours."

But what is required of man is something in its way more extraordinary than the "supernatural" functions which many teachings tell us are latent in him. Man is required to *discriminate,* to "know each thing's name," words echoing the Book of Genesis and applying, surely, to the processes or "creatures" within a man as well as to the creatures of external nature.

In my opinion, it is this ability to discriminate the metaphysical quality of various organic processes (including diseases) that really set ancient medicine apart from the modern. Modern physicians are very often refreshingly flexible and eclectic. Apart from its marked drawbacks as a guide for thinking about reality, the contemporary pragmatic criterion has given us a certain maneuverability at least in medical practice. But from the point of view of ancient systems such as the Chinese, modern medicine is *not eclectic enough*—in a sense. Man is more things than we imagine; more processes take place in him than we know. So, taking into account all the various forms of medicine that are now being practiced in addition to the orthodox—homeopathy, faith-healing, herbalism, naturopathy, chiropractic, etc.—it is not really a question of settling on one that corresponds to the ancient understanding of the human organism, but of finding in ourselves a quality of attention and discrimination that is one of the central attributes of what is called a "higher state of consciousness."



As has already been noted, historians of medicine are often perplexed by what they see as an incomprehensible mixture of "rational" medical practice and "magic" in ancient civilizations. But if there did once exist a sacred science of medicine, if medicine was once an aspect and an expression of genuine psychospiritual discipline, it should not be surprising that physicians existed who were able to exercise this power of discriminating among qualities of energy in the human organism. Could it be that what we label "magic" was, in some cases and among some peoples, a means of relating to certain energies which we today are no longer able to perceive, much less master? Is the fear which drives us to try to be conquerors of nature a factor which has reduced our sensitivity to these energies? And are we mentally comfortable only when dealing with what we consider destructive forces?—forces that from a larger perspective represent only a narrow band of the spectrum of downward and upward energies?

The subject of magic and medicine can therefore provide us with much food for

thought. We hear about "primitive" medicine men driving out "evil spirits." But what, exactly, are these "spirits"? Are they only the constructs of a superstitious imagination? Perhaps, often, they are. But perhaps they are a reference to certain energies which we are unaware of, for reasons we have already discussed. It is certainly no help to bring in the concept of *suggestion* in order to account for the apparent efficacy of these "magical" practices. And the reason it is no help is that this concept of suggestion is based on psychological theories which themselves are products of modern medical-scientific thinking which, as we have said, only acknowledges the existence of a very narrow range of universal forces. It is moreover an absurd presumption to assume that archaic man, or the pre-colonial American Indian, suffered from just the sort of neurotic conflict that characterizes contemporary civilizations.

To introduce ourselves more intelligently to the subject of sacred medicine, let us look at the Navajo tradition. What is the function of the famous Navajo sandpaintings, which irresistibly call to mind the sacred diagrams or mandalas of the Tibetan tradition? What psychophysical preparation does the Navajo way of life provide that the making and contemplation of these cosmic diagrams, and even the act of sitting inside them, connects the Navajo to forces that have obvious physical effects? Is the continuous chanting, which to our ears may sound like "mumbo jumbo," based on the same understanding of sound vibration that one finds in every other spiritual discipline that we know of, including of course the mantra yoga of Asia? And what are we to make of the reports by the pioneering American researcher, Washington Matthews, that novices learning this ceremonial are sometimes physically injured by the energies which it released, and that he himself suffered a paralytic stroke while learning it?[10]

Then there is the dancing. Is it only a means of what we moderns call "religious expression," or can specific postures and movements—together with certain precisely controlled bodily efforts—"make straight the paths of the Lord," that is, evoke in the dancer the flow of a more conscious force that can be perceived even by a spectator?

On the subject of effort, how are we to understand that disease is often treated by demanding of the patient a degree of physical activity that strikes us as naive, or even dangerous? (For example, the Koniaga medicine man wrestles his patient in order to drive out the "spirit"; in other tribes the patient is required to sit cross-legged, without ever lying down to sleep, for many days at a time.)

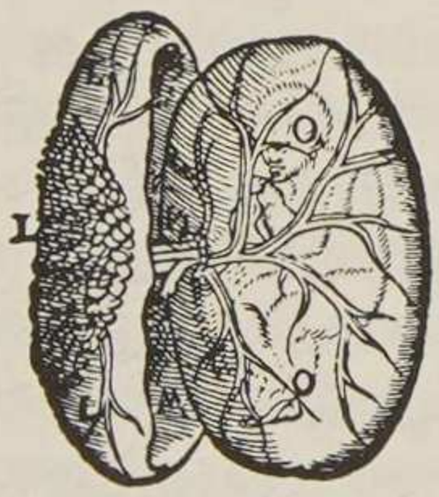
It is worth noting that the Cheyenne understood the word "medicine" to mean energy, and Vogel claims, in his monumental study of American Indian medicine, that the term applies to a whole array of ideas and concepts, as well as to remedies and treatments.[11]

In short, it is possible that we put the label "magic" on methods and phenomena which we simply do not understand, where causal relationships exist which we do not acknowledge—just as any child or primitive man might regard the results of our own technology. Therefore, the whole question of verifying for ourselves the value of certain ancient medical practices revolves around the development of a finer inward sensitivity to energy, and has little to do with the outward duplication of techniques. The point is that without this sensitivity the remedies may not "work," for

sensitivity to finer energies is not understood only as a bare witnessing, but as that which effects the channeling process by which these energies in fact pass from one "place" (in ourselves) to another.

In a strange way, therefore, our modern fear of nature is justified—but only so long as we remain cut off from the full scale of cosmic energies which is the "birthright" of microcosmic man. There is nothing "mysterious" or dark about this thought. An acorn which falls not on soil but on rock has just as much "reason" to be afraid of nature. It too is, so to say, cut off—for itself—from the full scale of ascending and descending forces which are possible for it. And, while it is still used by nature for nature's purposes (an animal eats it), it will never become an oak.

Is our contemporary civilization such that we modern men are like acorns which have fallen on rock? And what is the craft of medicine for such an "acorn"? To put the first question is to ask how we modern men have become alienated from the cosmos. And the latter question, while helping us to see that present-day medicine is but another expression of the modern psyche, will also reveal why it is in the long run futile to attack present-day medical theories apart from the question of man's disturbed inner connection to universal forces.





The point at issue is whether the human body can be studied in order to bring us self-knowledge and an understanding of our place in the universal order, as well as in order to hold back death and physical suffering. Surely, this is the only intelligent way to understand the possibility of medicine as a sacred science.

The elusiveness of a sacred study of the body is well illustrated by one of the most brilliant physiological essays of the twentieth century. In 1932, Dr. Walter Cannon brought together a tremendous amount of physiological data under the concept of *homeostasis,* the extraordinarily complex chemical equilibrium which the body must maintain throughout its life.

> When we consider the extreme instability of our bodily structure, its readiness for disturbance by the slightest application of external forces and the rapid onset of its decomposition as soon as favoring circumstances are withdrawn, its persistence through many decades seems almost miraculous. The wonder increases when we realize that the system is open, engaging in free exchange with the outer world...[12]

Soon after, he cites the dictum of the famous French physiologist, Claude Bernard, to the effect that "all the vital mechanisms, however varied they may be, have only one object, that of preserving constant the conditions of life in the internal environment." Cannon's entire book is a demonstration of this dictum as it applies to the regulation of body temperature, oxygen supply, the chemical balance of the blood, and so forth. To this day, the notion of homeostasis remains a cornerstone of scientific thought about bodily processes, and every textbook of physiology bears its imprint.

Reading this book, one gradually begins to feel a sort of schizophrenia setting in. One marvels at the facts which Cannon's thesis allows him to bring forth and yet the thesis itself is, so to say, less intelligent than the processes it embraces. The purpose of this whole organism and all its processes is simply to stay in one place until the inevita-

ble defeat of death. One is left with the impression that the sole aim of life is to evolve more and more complex and futile ways of excluding death. Nature itself is made to seem schizophrenic through this emphasis on *lateral homeostasis,* an equilibrium of lateral energies.

The impression that science projects our fear of nature upon its perceptions of the organism is particularly marked where Dr. Cannon discusses "the margin of safety" in bodily structure and functions. How are our bodies built? he asks. "Are they set up with niggardly economy? Is barely enough provision made for keeping us intact? Or is there allowance for contingencies—have safety factors been introduced on which we may count in times of stress?"

His answer, of course, is that the body is built with an incredibly wide "safety margin." A man may live quite normally, for example, with only one kidney—indeed, two-thirds of each kidney may be taken without serious disturbance. One-tenth of adrenal tissue is all that is really necessary for the body, and four-fifths of thyroid substance may be removed without abnormal effects. Only one-fifth of the pancreas is needed to furnish the insulin which the organism requires, and as for the busiest and most versatile organ of the body, the liver, three-fourths of it may be lost without serious harm. Ten feet of the small intestine (normally twenty-three feet long) were taken out of one patient and in many cases almost all of the large intestine was cleared away with results that actually seem to have been beneficial. Cannon cites many other examples: blood sugar and calcium level, systolic pressure, lung capacity, are all greater than need be. Even great areas of the brain are expendable, according to Cannon. He reports of one patient who, after surgical removal of both frontal lobes, "was perfectly aware of time, place and person; the memory was unimpaired; he read, wrote, and passed mathematical tests accurately, and in conversation was not distinguishable from a normal individual." Recent advances in brain research and neuro-surgery have added even more to Cannon's picture.

But what exactly is this picture? Are we quite sure that we see it all in the only way possible? Imagine that I have stepped inside a huge, complex factory; everywhere there are enormous and intricate machines merely idling. My companion guesses that this is the safety factor for times of stress when there is a great demand for production, as most of the time the work of the factory takes place in one small building. Perhaps this is so, but the thought crosses my mind that since this factory was designed for much more work than is being asked of it, perhaps the owner, who has only just inherited it, does not really understand all the work that these machines are designed for. Perhaps he has grown so content with its limited production, and so afraid of being deprived of it, that he cannot see it any other way.

This metaphor provides one obvious clue concerning the difficulty of a sacred study of the body. No amount of speculation or authoritative advice will persuade the owner of this factory to use it differently so long as his fear has the upper hand. We may read as many ancient texts as we please concerning the meaning of the various organs of the body, but as long as the fear of physical death and pain is uppermost in our minds we will remain "pragmatic." We will not be free to look at this body impartially, as one may read a book. The conquest of fear is therefore the main prerequisite for learning about ourselves through a study of the body.

This must certainly be one reason why ancient man joined medicine with religious discipline. It cannot lead one far to study the body without at the same time directly studying one's own thought and emotions, as it was done in the great psychospiritual disciplines that we know of. This same problem exists with respect to understanding a sacred book. When we turn to scripture directly, without having attempted to see the whole of ourselves in our relationship to life, the result is what we have called a too "literal" understanding. We read the text in the light of habitual associations which serve our fears and desires, and consequently our reading of the sacred book only strengthens what needs to be weakened, and only weakens what needs to be strengthened. Thus it is said that all great teaching is *indirect*.

May we not suggest, then, that to heal the sick and to promote physical health is the outer or exoteric side of the science of medicine, while to study the body in order to understand the cosmic laws is its inner or sacred dimension? Looking at medicine in this way, we are immediately rid of certain confusions surrounding the renewed modern interest in systems of medicine that seem to echo ancient times. The adherents of these non-orthodox systems claim that their methods work better. Perhaps often they do. Perhaps in many areas homeopathy, say, or chiropractic are more effective than modern orthodox treatments. But from the point of view we are exploring, all modern medicine—orthodox and non-orthodox—falls under the same umbrella: to study the body in order to preserve the body. Sacred medicine, on the other hand, adds to this the intention of studying the body in order to transcend the body. It is obvious, then, that modern man does not wish for a sacred science of medicine, no matter what great and ancient ideas he infuses into his medical theories.

Did there once exist on earth a craft of medicine which alleviated suffering without thickening the veil between man and death? Certain aspects of ancient texts suggest that possibility. We have already mentioned that among the ancient Egyptian writings, for example, one finds both a sophisticated knowledge of pharmacology and surgery and an extensive, bewildering application of *magic*. The same is true of ancient China, the American Indian and almost every traditional civilization of which we have sufficient record. It seems

that the traditional mind recognizes two sorts of disease just as it recognizes two sorts of suffering: one which it is incumbent upon man to expel and the other which it is incumbent upon man to take in, one "profane" and the other sacred.

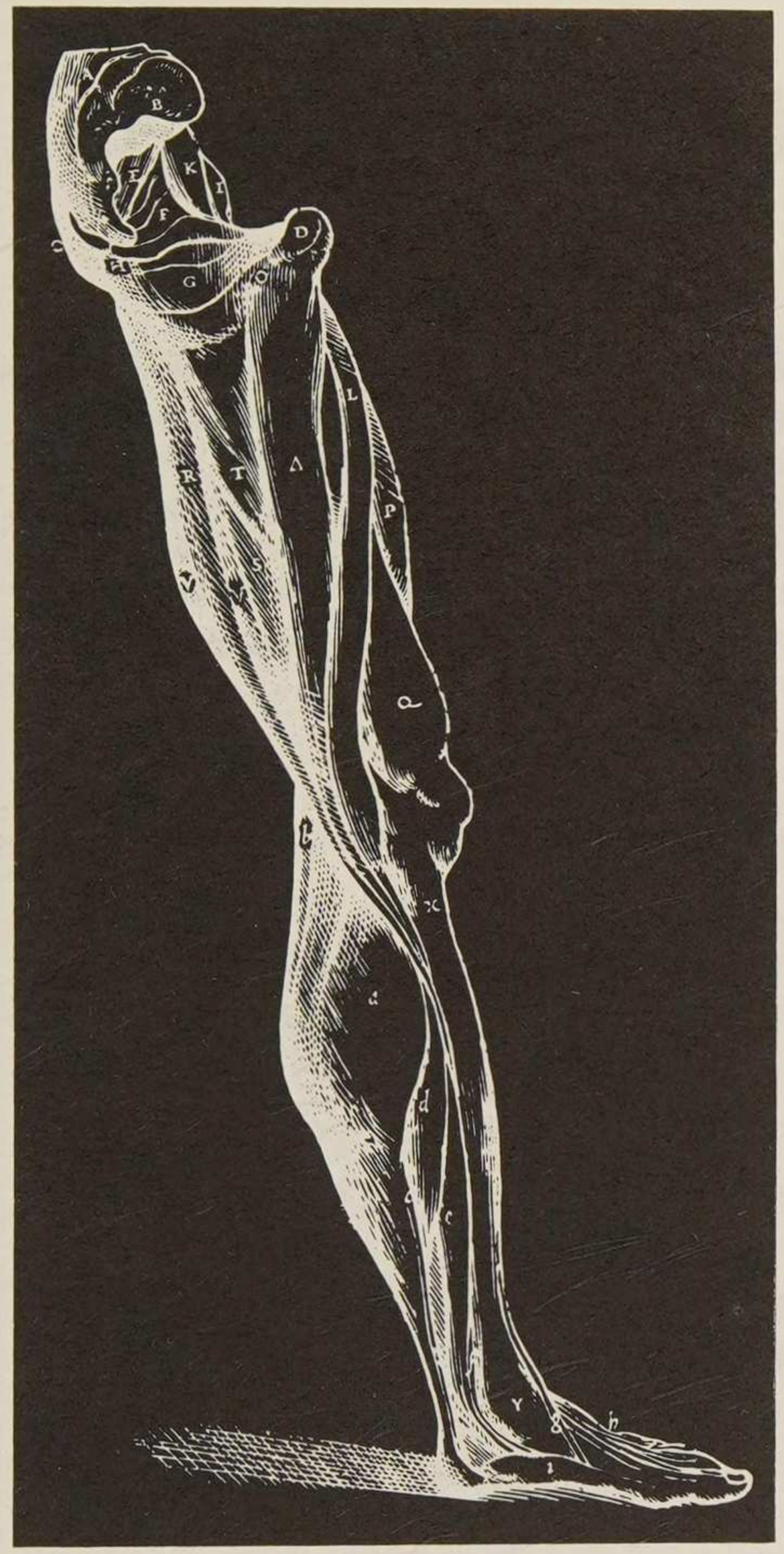
In general, modern man is displeased by the distinction between educative or "redemptive" suffering and suffering that is unnecessary or "evil". This is a subject which would require an extensive examination of the modern science of psychology. Here we need only mark in our thought the distinction between purgation and waste, between a process that separates higher from lower and one that mixes and confuses them. We shall find our way back to the idea of disease as punishment only when we begin to understand that the psychospiritual meaning of punishment is purgation. And we shall connect the craft of medicine to sacred teachings only if we remember that the goal of such teachings is to awaken in man a relationship to the greater energies of consciousness, and that for this to take place a man must be purged of his false sense of agency.

I find this a very helpful way of looking at traditional man's blending of religion and medicine. Like everyone else, I had always assumed that ritualistic medicine was mainly superstition and primitive psychotherapy. Absurdly underestimating the function of religion, we naturally misunderstand the historical association of religion and medicine. But now we begin to see that what we take to be ancient man's naive efforts to preserve the physical body were often his rather extraordinary methods of creating a confrontation in the body between divine energies and the physiological results of egoism. The goal of such a confrontation would surely have been *the simultaneous restoration of health and the preparation for death.* That these two go hand in hand is something we find incomprehensible. But I believe that the joint attainment of these two goals is precisely the definition of sacred medicine.

What must give us pause in all of this is the idea that a conscious universe does not exist for the ego, the isolated intellect, the self that I am when I imagine I am a self. That is to say, what surely must give us pause is the idea which ancient traditions communicate across the years: that I may be diseased because I am no longer in relationship to the greater forces passing through me. And that I then become a puppet of these same forces as they act outside me on the great scale of nature and the universe, affecting the masses of mankind and organic life—in which I and my body are but a speck.

In such a state of consciousness, the law of death, the scale of death, threatens man as an enemy threatens. Against it he is utterly powerless. The great crime of modern science is only that with it we persevere in believing that the real world is the world that appears to the ego with its isolated intellect and its fears that breed pragmatism. No wonder we have transformed medicine into a system for the temporary preservation of the ego.

The idea of sacred medicine teaches us that the universe is conscious only to conscious man, and that there are states of being in which universally active forces can reach my body from within my body. These forces cannot act upon my body from without, except as my body is part of organic life on earth with its great cycle of life, death, fertilization and decay. The ego cannot battle against that, either in nature or in the body. Man in the state of egoism is crushed by the universe, both actually and in theory. The ego alone, with all its bodily habits to support it, lives in a hostile universe because it constantly fights to preserve itself. It is a euphemism to speak of the universe of modern science as unalive,



non-living. We call it a dead universe because we are unable to bear that our state of consciousness evokes a hostile universe. Traditional man was clearer about the enmity we gather when we live cut off from higher consciousness. It is a lawful enmity to be sure, not directed at me personally, but it is a genuine enmity—and to communicate this it is not so far from the mark to speak of "evil spirits" and of *punishment*.

Thinking such thoughts, how can we ever again look with condescension upon the rituals of so-called primitive medicine? We naively believe these rituals had only a psychological effect and we hastily compare them to our more "sophisticated" methods of psychosomatic medicine. But psychosomatic medicine seeks to preserve the ego; sacred medicine sought to free man from self-illusion and its physiological consequences. The one manipulates our habits of feeling so as to reestablish the habits of the body; while of the other, we can only surmise that it offered men the chance to understand upon what in the universe their well-being really depended.

The above article was originally presented at a conference on traditional Islamic medicine sponsored by the Imperial Iranian Academy of Philosophy and Pahlavi University in Shiraz, Iran in 1977. It will appear in a forthcoming book with other papers given at the conference.

Notes:

1. *Paracelsus, Selected Writings,* edited by Jolande Jacobi, Bollingen Series XXVIII, 2nd ed., Princeton University Press, Princeton, 1969.

2. Charles Singer and E. Ashworth Underwood, *A Short History of Medicine,* Oxford University Press, London and New York, 1962.

3. Benjamin Lee Gordeon, M.D., F.I.C.S., *Medieval and Renaissance Medicine,* The Philosophical Library, New York, 1959.

4. See L. Edelstein, *Ancient Medicine,* The Johns Hopkins University Press, Baltimore, 1967.

5. Heinrich R. Zimmer, *Hindu Medicine,* The Johns Hopkins University Press, Baltimore, 1948.

6. René Dubos, *Mirage of Health,* Anchor Books, New York, 1961.

7. Quoted in Jeurgen Thorwald, *Science and Secrets of Early Medicine,* Longmans, Green, England, 1962.

8. Adapted from Joseph Needham, *Science and Civilization in China,* vol. II, Cambridge University Press, New York and London, 1962.

9. Wing-Tsit Chang, *A Source Book in Chinese Philosophy,* Princeton University Press, Princeton, 1963.

10. Frank Waters, *Masked Gods,* Sage Books, Denver, 1950, p. 256. "And of late years Reichard, in her two-volume study of *Navajo Religion* records that the singer, Crawler, incurred paralysis of the legs (and his name) because he was too weak to stand the power of this same great chant."

11. Virgil J. Vogel, *American Indian Medicine,* University of Oklahoma Press, Norman, 1970.

12. Walter B. Cannon, M.D., *Wisdom of the Body,* W.W. Norton, New York, 1963. Originally published in 1932.

EPICYCLE

The Questions of King Milinda

"The Questions of King Milinda" is adapted from an ancient Pali source text of the same name. Tradition holds it to be the faithful record of dialogues held between the Buddhist monk Nagasena and his contemporary, the Greek king of Bactria, Menander. The dialogues are of interest not only as Buddhist texts, but also as attempts to demonstrate the kinship and divergencies of two forms of thought. PARABOLA will publish further dialogues in forthcoming issues. The following is the second in this series.

When King Milinda had thus observed the venerable Nagasena seated among the Order of Arahats, he went up to him and greeted him with the respect and courtesy of friendship. Then he took his seat, and Nagasena reciprocated the courtesy so that the king's heart was pleased.

After a respectful silence, Milinda turned to Nagasena and began by asking, "By what name are you known, Venerable One?"

Nagasena replied, "I am addressed by the members of the Order as Nagasena, O king, for that is the name given by my parents. But such designations — Nagasena, Surasena, Assagutta, and so on — are no more than convenient terms of address. They are not that by which we may be known, for there is no permanent individuality implied by such terms."

Then King Milinda turned and addressed the company of Greeks and the Order of Arahats together in this wise: "This Nagasena says that there is no permanent individuality implied in his name. How is this possible? Venerable One," he continued, speaking now to Nagasena, "if this is so, who is it who tends to the needs of your Order? Who is it who has learned the articles of your faith and now guides others on the way? Who is it who lives a life of righteousness, and who is it who meditates? What is this Nagasena? Is it the hair, perhaps, that is Nagasena?"

"I do not say that, O king," replied the sage.

"Perhaps, then, the limbs of the body?"

"Most certainly not."

"Is it the nails, the teeth, the skin, flesh or bones? Is it the marrow, the kidneys, the lungs? Is it the stomach, the intestines, the brain, the spleen? Is it the phlegm, bile, urine, pus, blood, saliva, sweat, lymph, mucus or tears? Are any or all of these Nagasena? If not, is it then the form of the body that is Nagasena, or the sensation, or the ideas, or the feelings or the consciousness?" asked the king.

"No," replied Nagasena.

"Is it all of these things combined?"

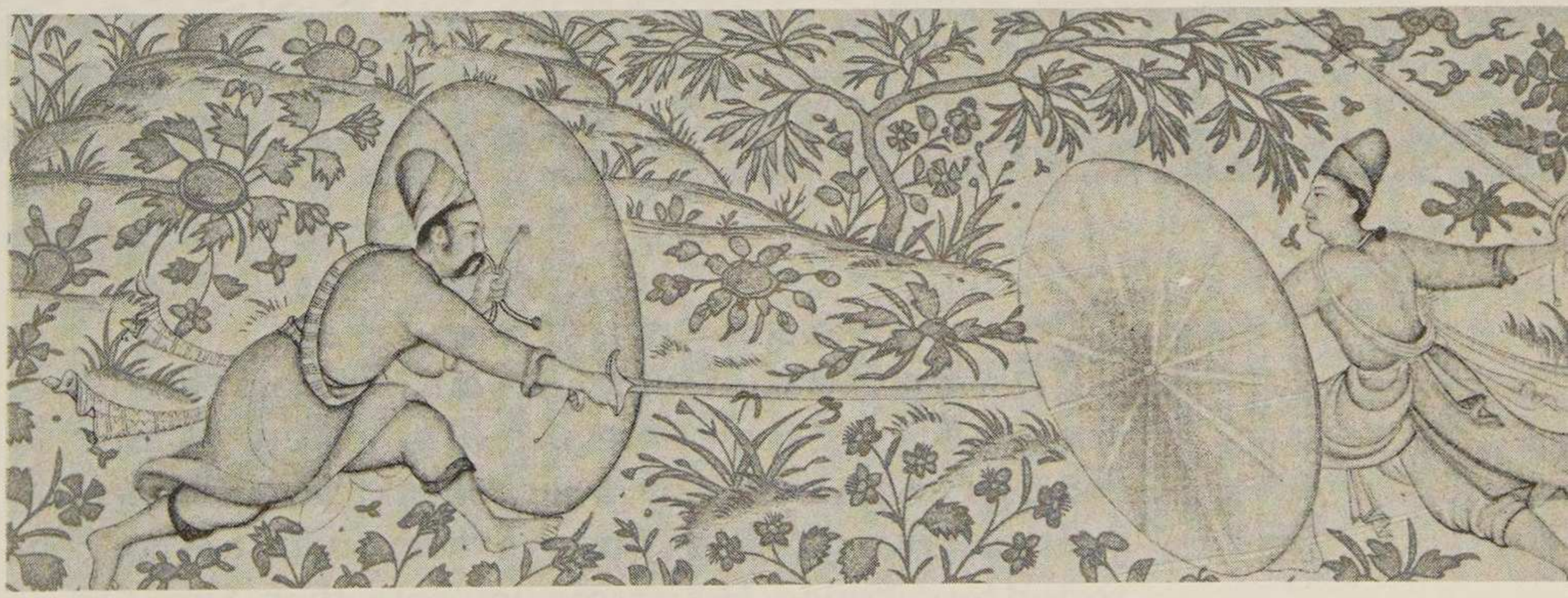
"No!"

But is there any thing other than all these which is Nagasena?"

"There is not, O king."

"I conclude, then, that there is no Nagasena here at all! Where is Nagasena?" said the king, looking about him as if mystified. "And who is this man before me? Has Nagasena lied or is this man an impostor?"

At these words, the company of Greeks laughed, and the Order of Arahats was perturbed, not knowing among them how to reply. But Nagasena smiled at the laughter of the Greeks, and when the fit had passed and silence had fallen, he said, "Your majesty, no doubt, has been brought up in wealth and luxury?"





"It is so, Venerable One, whoever you are."

"Having been so brought up, you doubtless have tender feet. To have come here on foot in hot, dry weather and over rough and stony ground would have troubled your majesty much. Yet I observe that your face is not contorted by suffering. How came you here, then, Sire? On foot or in a chariot?"

Milinda replied, "I did not come on foot, Sir, but in a carriage."

"A carriage?" answered Nagasena. "Pray, what is that? Is it the shafts?"

"I did not say that," said the king.

"Perhaps, then, it is the axle," said Nagasena, as if he had concluded his questions and had arrived at the answer.

"Most certainly not," said Milinda.

"Then it must be the wheels, or the framework, or the traces, or the yoke. And if not, is it perhaps the spokes, the goad, or the seat? Are any or all of these the carriage?"

"No!" replied the king.

"But is there anything else than these that is the carriage?" asked Nagasena, and still the king answered no.

"Most curious!" said Nagasena. "Here is before me a man who says he is King Milinda, who did not come by foot, and yet the carriage he says he came in does not exist. 'Carriage' is a mere empty sound denoting nothing. But since the king came not on foot, it follows that he is not here after all. Has the great king lied? Or is this man before me an impostor?"

Then the Order of Arahats applauded and said, "Let your majesty get out of that if you can."

Then King Milinda addressed Nagasena, saying, "No untruth have I spoken, reverend Sir. It is on account of its having all these things — yoke, traces, shaft, axle, wheels and frame — and because of its purpose and use as a conveyance, that it is called by the generally understood designation of 'carriage.'"

"Just so, O king, is 'Nagasena.'"

—Retold by Paul Jordan-Smith

BURNING WATER, LIQUID FIRE

Know, O beloved, that man was not created in jest or at random, but marvellously made and for some great end. Although he is not from everlasting, yet he lives for ever; and though his body is mean and earthly, yet his spirit is lofty and divine. When in the crucible of abstinence he is purged from carnal passions he attains to the highest, and in place of being a slave to lust and anger becomes endued with angelic qualities. Attaining that state, he finds his heaven in the contemplation of Eternal Beauty, and no longer in fleshly delights. The spiritual alchemy which operates this change in him, like that which transmutes base metals into gold, is not easily discovered, nor to be found in the house of every old woman. ...Now the treasures of God, in which this alchemy is to be sought, are the hearts of the prophets, and he who seeks it elsewhere will be disappointed and bankrupt on the day of judgement when he hears the word, "We have lifted the veil from off thee, and thy sight today is keen."

God has sent on earth a hundred and twenty-four thousand prophets to teach men the prescription of this alchemy, and how to purify their hearts from baser qualities in the crucible of abstinence. This alchemy may be briefly described as turning away from the world to God, and its constituents are four: 1) The knowledge of self. 2) The knowledge of God. 3) The knowledge of this world as it really is. 4) The knowledge of the next world as it really is.

—*Al-Ghazzali*[1]



FIRST: *I speak not false things, but what is certain and most true.*

SECOND: *What is below is like that which is above, and what is above is like that which is below, to produce the miracle of one sole thing.*

THIRD: *And as all things came from one word of one Being, so all things came from this one thing by adaptation.*

FOURTH: *Its father is the sun, its mother the moon, the wind carries it in its belly, its nurse is the earth.*

FIFTH: *It is the father of all perfection throughout the world.*

SIXTH: *The power is great if it be changed into earth.*

SEVENTH: *Separate the earth from the fire, the subtle from the gross, softly and with great care.*

EIGHTH: *Ascend with great intelligence from earth to heaven, and again descend to earth, and unite together the powers of higher things and lower things. Thus you will receive the glory of the whole world, and darkness will fly away from you.*

NINTH: *This has more strength than strength itself, for it overcomes every subtle thing and can penetrate everything that is solid.*

TENTH: *Thus the world was formed.*

ELEVENTH: *Hence come the wonders here established.*

TWELFTH: *Therefore am I named Hermes Trismegistus, having three parts of the philosophy of the whole world.*

THIRTEENTH: *That which I had to say concerning the sun's operation is finished.*

—Inscription of the Emerald Tablets of Hermes Trismegistus

The alchemists had the idea that the alchemical work in the retort and the making of the philosopher's stone is a repetition of the creation, and at the same time a fabrication of the glorified body.

There existed long ago in Tibetan, Indian and partly also in Chinese Buddhism the idea that the religious practice of meditation serves the goal of producing within the still living and mortal body the diamond body, into which you move, so to speak. Already in this lifetime you use your diamond body more and more as a dwelling place, so that at the moment of death, like a skin which falls off from a fruit, this mortal body falls away and the glorified body, or in Eastern language, the diamond body, is already there. The glorified body, a sort of immortal substance as carrier of the individual personality, is already produced by religious practice during life-time. The same idea, which is strange to official Christian teaching, does come up vigorously in alchemical philosophy. The alchemists, too, strove from the beginning to produce such a glorified or diamond body. In order to build up this glorified body, called the philosopher's stone, you must repeat the whole process of creation.

—*Marie Louise von Franz*[2]



"Ordinary chemistry does not take into consideration all the properties of a substance, namely, it does not take into consideration 'cosmic properties.' The chemistry of which we speak here studies matter on a different basis from ordinary chemistry and takes into consideration not only the chemical and physical, but also the psychic and cosmic properties of matter.

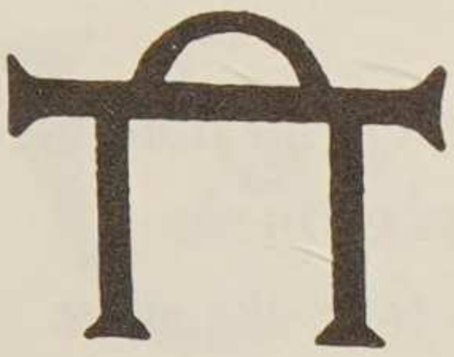
"This chemistry or alchemy regards matter first of all from the point of view of its functions which determine its place in the universe and its relations to other matters and then from the point of view of its relation to man and to man's functions...

"Let us suppose that the air we breathe is composed of twenty different elements unknown to our science. A certain number of these elements are absorbed by every man when he breathes. Let us suppose that five of these elements are always absorbed. Consequently the air exhaled by every man is composed of fifteen elements; five of them have gone to feeding the organism. But some people exhale not fifteen but only ten elements, that is to say, they absorb five elements more. These five elements are higher 'hydrogens.' These higher 'hydrogens' are present in every small particle of air we inhale. By inhaling air we introduce these higher 'hydrogens' into ourselves, but if our organism does not know how to extract them out of the particles of air, and retain them, they are exhaled back into the air. If the organism is able to extract and retain them, they remain in it. In this way we all breathe the same air but we extract different substances from it. Some extract more, others less.

"In order to extract more, it is necessary to have in our organism a certain quantity of corresponding fine substances. Then the fine substances contained in the organism act like a magnet *on the fine substances contained in the inhaled air. We come again to the old alchemical law: 'In order to make gold, it is first of all necessary to have a certain quantity of real gold.' 'If no gold whatever is possessed, there is no means whatever of making it.'*

"The whole of alchemy is nothing but an allegorical description of the human factory and its work of transforming base metals (coarse substances) into precious ones (fine substances)."

—*G.I. Gurdjieff*
quoted by P.D. Ouspensky[3]



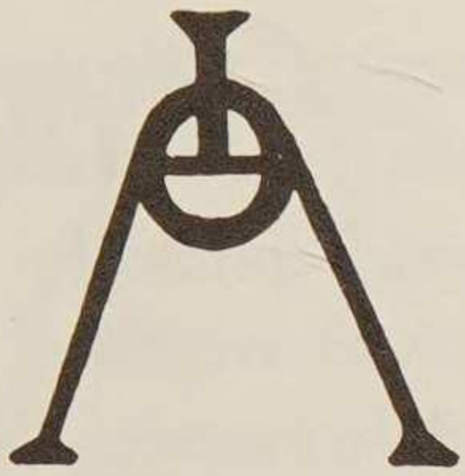
A number of symbols need to be pondered here. Glass, for example; it is produced from silica and potash, both of these, dense and opaque, are homologous to the elemental material body, the body of perishable flesh with which we are all familiar. When subjected to fusion, their impurity and dirt go away; we are left with clear glass; the interior is visible through the exterior, the exterior is visible through the interior. This then, is homologous to the spiritual body, the caro spiritualis; *the body which survives "in the tomb," that is, in Hūrqalyā, and to which "respite and sojourn in Paradise" are given, whereas the opaque density of the silica and potash was homologous to the material elemental body. Consider how, from silica and potash, dense and opaque, there issued a body in a transparent subtle state. The latter is unquestionably the same mineral substance, and yet it is not. It is something other.*

Now, supposing this glass in its turn is subjected to fusion: let a certain appropriate chemical be projected onto it and thoroughly penetrate the whole mass; the glass becomes very fine and brilliant glass. If the Elixir of whiteness, the "philosopher's chemical" be projected onto this fine glass, it then becomes a crystal which flames in sunlight (lens glass), because it causes the sun's rays on striking its surface, to converge. It is certainly still glass, and yet it is something other than glass; while remaining glass, it is, however, glass to which something has happened, something which has so completely purified it that now it ranks much higher than the first glass. This incandescent glass is homologous to the astral body which accompanied the Spirit at the time of the exitus, *when the latter departs from its elemental material body. It is the body with which the Spirit enters the Western Paradise, the Paradise of Adam. Well then! if this sparkling crystal is melted once again and the white Elixir is again projected onto it, lo and behold! it becomes diamond. It is still glass, and yet no—it is something other—but not so, it is certainly itself but itself after undergoing all these trials.*

—Shaikh Ahmad Ahsā'i[4]

It is particularly interesting to note that the alchemists "understand by the waters, the rays and the shining of their fire," and that they give the name of "ablution," to a purification which operates by fire, so that "the ancients concealed the ablution in the enigma of the salamander, which they say feeds on fire, and the incombustible fabric (asbestos) which is purified and whitened in it without being consumed." By this can be understood the frequent allusions made in hermetic symbolism to "fire which does not burn" and to "water which does not wet the hands," and also to the fact that "animated" mercury, that is, vivified by the action of sulphur, is described as "burning water" and sometimes even as "liquid fire."

—*René Guénon*
Symboles Fondamenteaux



THE CRYSTAL CABINET

The maiden caught me in the wild,
Where I was dancing merrily;
She put me into her cabinet,
And locked me up with a golden key.

This cabinet is formed of gold,
And pearl and crystal shining bright,
And within it opens into a world
And a little lovely moony night.

Another England there I saw,
Another London with its Tower,
Another Thames and other hills,
And another pleasant Surrey bower.

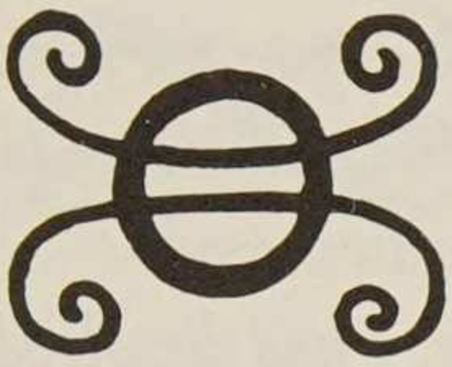
Another maiden like herself,
Translucent, lovely, shining clear,
Threefold, each in the other closed,—
Oh what a pleasant trembling fear!

Oh what a smile! A threefold smile
Filled me that like a flame I burned;
I bent to kiss the lovely maid,
And found a threefold kiss returned.

I strove to seize the inmost form
With ardour fierce and hands of flame,
But burst the crystal cabinet,
And like a weeping babe became:

A weeping babe upon the wild,
And weeping woman pale reclined,
And in the outward air again
I filled with woes the passing wind.

—*William Blake*[5]



I have now sufficiently and fully discovered the principles of our chaos. In the next place I will show you how you are to use them. You must unite them to a new life, and they will be regenerated by Water and the Spirit. These two are in all things; they are placed there by God Himself, according to that speech of Trismegistus: "Each thing whatsoever hath within itself the seed of its regeneration." Proceed then patiently, but not manually. The work is performed by an invisible artist, for there is a secret incubation of the Spirit of God upon Nature. You must only see that the outward heat fails not, but with the subject itself you have no more to do than the mother hath with the child that is in her womb. The two former principles perform all; the Spirit makes use of the water to purge and wash his body; and He will bring it at the last to a celestial, immortal constitution. Do not you think this impossible. Remember that in the incarnation of Jesus Christ the Quaternarius, *or four elements as men call them, were united to their Eternal Unity and* Ternarius. *Three and four make seven; this Septenary is the true Sabbath, and Rest of God into which the creature shall enter. This is the best and greatest manuduction that I can give you. In a word, salvation itself is nothing else but transmutation. "Behold," saith the Apostle, "I show you a* MYSTERY: *we shall not die, but we shall be all* CHANGED, *in a moment, in the twinkling of an eye, at the sound of the last trumpet." God of His great mercy, prepare us for it, that, from hard, stubborn flints of this world, we may prove chrysoliths and jaspers in the new eternal foundation; that we may ascend from this present distressed Church, which is in captivity, with her children, to the free Jerusalem from above, which is the mother of us all.*

—Thomas Vaughan[6]

Basilius Valentinus . . . compares the fire of the last day to the fire of the alchemist, and the world to the alchemist's furnace, and would have us know that all must be dissolved before the divine substance, material gold or immaterial ecstasy, awake. I had dissolved indeed the mortal world and lived amid immortal essences, but had obtained no miraculous ecstasy. As I thought of these things, I drew aside the curtains and looked out into the darkness, and it seemed to my troubled fancy that all those little points of light filling the sky were the furnaces of innumerable divine alchemists, who labour continually, turning lead into gold, weariness into ecstasy, bodies into souls, the darkness into God; and at their perfect labour my mortality grew heavy, and I cried out, as so many dreamers and men of letters in our age have cried, for the birth of that elaborate spiritual beauty which could alone uplift souls weighted with so many dreams.

—William Butler Yeats[7]

Unless you make yourself equal to God, you cannot understand God: for the like is not intelligible save to the like. Make yourself grow to a greatness beyond measure, by a bound free yourself from the body; raise yourself above all time, become Eternity; then you will understand God. Believe that nothing is impossible for you, think yourself immortal and capable of understanding all, all arts, all sciences, the nature of every living being. Mount higher than the highest height; descend lower than the lowest depth. Draw into yourself all sensations of everything created, fire and water, dry and moist, imagining that you are everywhere, on earth, in the sea, in the sky, that you are not yet born, in the maternal womb, adolescent, old, dead, beyond death. If you embrace in your thought all things at once, times, places, substances, qualities, quantities, you may understand God.

—Corpus Hermeticum XII[8]

And Hermes and other (philosophers) say, that if a man who hath this science should live for a thousand years, and every day must feed seven thousand men, yet should he never lack.

— Thomas Aquinas[9]

Notes

1. Al-Ghazzali, The Alchemy of Happiness *(New York: Orientalia, 1964).*

2. Marie Louise von Franz, Patterns of Creativity Mirrored in Creation Myths *(Zurich and New York: Spring Publications, 1975).*

3. P.D. Ouspensky, In Search of the Miraculous: Fragments of an Unknown Teaching *(New York: Harcourt, Brace Jovanovich, Inc., 1965).*

4. Henri Corbin, Spiritual Body and Celestial Earth *(Princeton: Princeton University Press, 1977).*

5. William Blake, The Poetical Works of William Blake, *ed. William Michael Rossetti, (New York: AMS Press, 1914).*

6. Thomas Vaughan, Lumen de Lumine, *ed. A.E. Waite (London: John M. Watkins, 1910).*

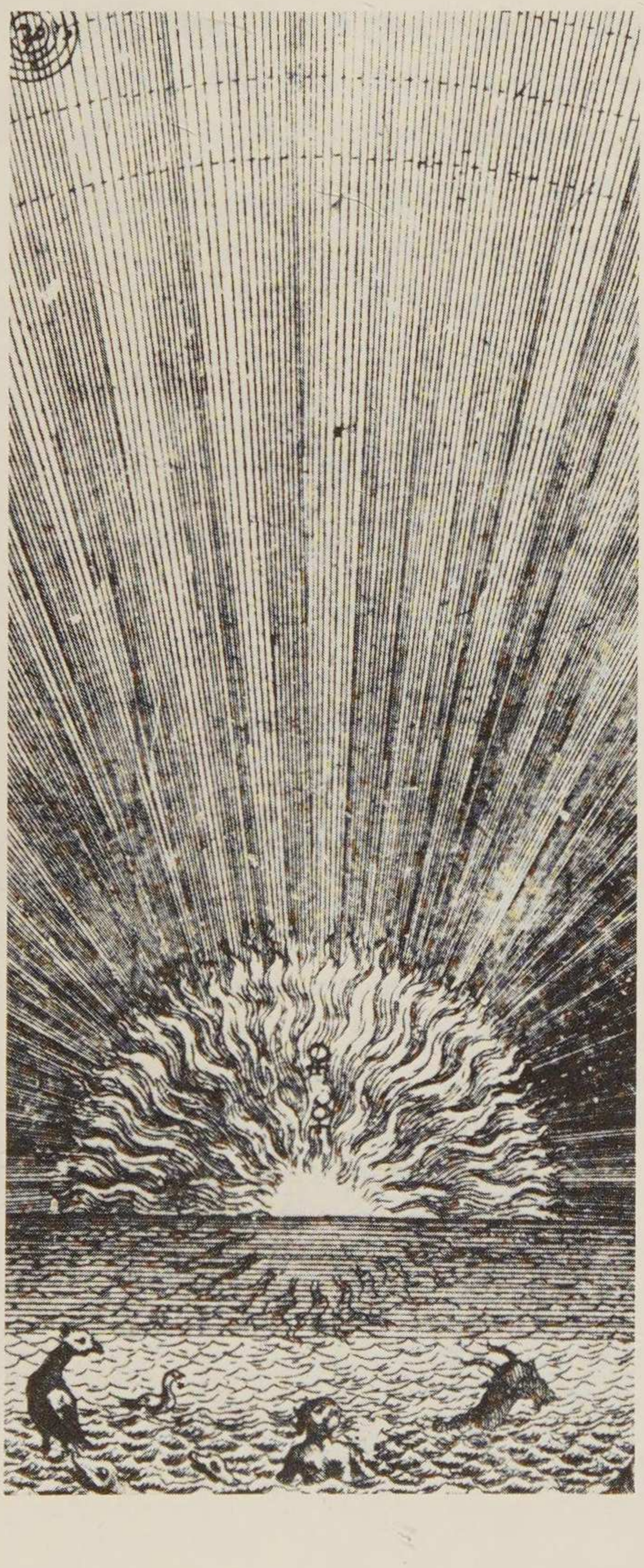
7. William Butler Yeats, Early Poems and Stories *(New York: Macmillan, 1925).*

8. Frances A. Yates, Giordano Bruno and the Hermetic Tradition *(Chicago: University of Chicago Press, 1964).*

9. Marie Louise von Franz, ed., Aurora Consurgens—A Document Attributed to Thomas Aquinas on the Problem of Opposites in Alchemy *(Princeton: Princeton University Press, 1966).*

Note: The symbols appearing in this article (in consecutive order) are: cinnabar, alum, eggshells, vitriol, potash, mercury, crystal, nitre oil, burned pebbles, nitre flowers, and chalc.

The Retrieval



Up to the eighteenth century, alchemy was known in Europe as the esoteric interpretation of the mineral world as well as the means by which it could be manipulated. Its subsequent decline was perhaps due to the change that came over the craftsmen's guilds in Europe after the Renaissance, when they ceased, little by little, to withhold the secret of their techniques. The pivotal event was the publication of the first technical encyclopedias, such as the *Théatre des instruments mathématiques et mécaniques* of Jacques Besson in 1578. From then on, the guilds also began to fail to relate their technical procedure to a symbolical frame of reference rooted in metaphysics, and crafts gradually ceased to have an esoteric basis. In the long run, this trend resulted in the debasing of the arts: for example, in the eighteenth century architecture lost sight of its Pythagorean foundations, and the "science of divine proportions" was no longer applied to building. Alchemy, which has always been the most esoterically exclusive craft and the most metaphysically oriented, was totally eclipsed, and with it a great part of traditional medicine.

Signs to the contrary persisted, however: Newton devoted his best and maturest energies to the study of alchemy; Leibnitz joined the Rosicrucian Society and became secretary to one of its chapters thanks to his immense alchemical erudition. Manget, Arch-Physician to the King of Prussia, gathered and published in 1702 a *Bibliotheca chemica curiosa,* a massive collection of most of the European alchemical textbooks; an alchemical weekly appeared in Hamburg in 1746, and Goethe frequented a group of practicing alchemists in his early youth, and

# of Alchemy

by Elémire Zolla

also tried his hand at transmutations. Ever since, a self-styled alchemy has survived in Europe and America, somewhere near the idiot fringe of society; but very few writers have dealt seriously with the subject. Nathaniel Hawthorne left some posthumous papers in which his knowledge of the lore is apparent, and August Strindberg even worked at the crucible and left some important notes about the results. But if there was a chain of adepts, they remained successfully inconspicuous. Only one real connoisseur between the two wars can be safely mentioned; he signed himself Fulcanelli.

The first step in the quest for the retrieval of possible alchemical truths is not simply a provisional acceptance of the alchemical outlook. It is necessary to reverse the tables and examine our contemporary assumptions through the eyes of an alchemist.

According to the modern adept Fulcanelli, for example, our formula for water, H_2O, must be considered unbelievably superficial. Two parts of hydrogen combine with one of oxygen and water results; but, he would ask, how do we account for all the properties of water that are absent in both gases? What agent causes water to crystallize according to certain patterns at certain temperatures? To the alchemist there is a *formal* cause of water, and of this there can be no mention in a chemical formula, bound to the realm of material causes. But even within these narrow limits, why is it that the formula ignores the third factor in the formation of water: fire? The obvious answer would be that it acts as a catalyst. But to an alchemist, fire is hidden in the inner grain of every substance. If you take a lump of sugar and break it up in the dark, a blue light will show. Where does it come from? Was it in the crystals? Fire is everywhere, oxidation is a result and not a cause, and so on. If we moderns experimentally accept to be the losers in the dispute, the next step will be to train our minds to focus on the objects, which seemed to them to sum up the gist of life and reality. Their selection of relevant objects and facts implied that metaphysics was the experimentally valid pattern of reality.

For instance, metaphysics teaches that Unity is manifested primarily in triads, and alchemists saw plants yielding three distinct parts when subjected to distillations: their "soul" or volatile oil, their "spirit" or alcohol, their "body" or salt; just as men subjected to analysis show a soul, a spirit, and a body, and as minerals and metals have a sulphurous principle that colors them, a mercurial principle that becomes apparent in their fumes and in their liquefactions, and a salt that binds these two together. Alchemists verified metaphysics in their daily work. Facts that we hardly bother to notice held great significance for them: for instance, cases of hypersensitivity to metals, especially in people endowed with spiritual gifts, was considered a sign of the unstable, suffering condition of metallic inner balances. The cases of human skin becoming resistant to fire, on the other hand, implied an inner stability of the flesh resembling, in alchemical jargon, that of gold. As a matter of fact, our label of "hysterical or maniacal anesthesia" fails to explain adequately the resistance of the tissues that ought to be scorched in fire-walking such as is even today practiced in Thessaly at the gatherings of the *Anastenarides* fraternity, not to mention other instances in Asia and Africa.

To an alchemist, even more revealing of the inner structure of reality would be cases of holy men influencing their bodily structure to the point of inducing at will a comatose condition, which in yoga is known as *nirvikalpasamadhi.* Such comatose bodies were supposed to have medicinal properties and were considered to be projections of the quality or degree of the philosophic stone that had been attained. An alchemist in present-day Italy would consider as the most important fact recorded by the press in recent times the case of a devotee who plunged herself into a sort of catalepsy and has remained in this condition for years. The ailing seek contact with her body.

Chemistry and pharmacology are heavily indebted to sections of alchemical knowledge that were eventually divulged, and it is probable that there was much more that never leaked out. One suspects that the most important procedures remained carefully guarded; of this, evidence abounds. The old claims of Borrichius can now be reconsidered and amplified by new discoveries. In the Graeco-Roman world alcohol was known to the adepts; on one occasion they made a public display of it, when they saturated it with salt, soaked the hair of the celebrants of the Dionysian festivals with the mixture, and set fire to it at the peak of the celebration. The flames blazed but did not burn. "Our fire does not burn" was a refrain of the alchemists. Roman army engineers used an acid that bored through rocks; alchemists boasted of their "corrosive waters." The so-called "vitrified forts" in Scotland, Ireland, Germany and Hungary indicate that stones were probably soldered by vitrification at high temperatures as early as the first century A.D., and alchemical texts often refer to "Vulcan's vitrification."

At the threshold of our times one can draw up a long list of secrets known to the great Neapolitan alchemist of the eighteenth century, the Prince of San Severo. He tinctured marbles and stones, employed solid cements, and also metalized the circulatory system of human beings. In the crypt of the San Severo chapel in Naples two skeletons are still on display with all their arteries and veins intact. Probably the Prince injected first sulphur and alchemically treated lead into the system.

As for Chinese antiquity, certain Tsing tombs contain aluminum and alloys requiring temperatures of 2300 degrees centigrade. In 1968, an even more baffling challenge to our present-day knowledge was unearthed in Hopei: the corpse of the dame of Tai, whose skin was perfectly elastic after 2000 years. The body was not mummified, nor dried up, nor embalmed. In the tomb there was a liquid containing mercury, and the lady was clad in gold and jade —the substances which Chinese alchemists claimed to be energizing.

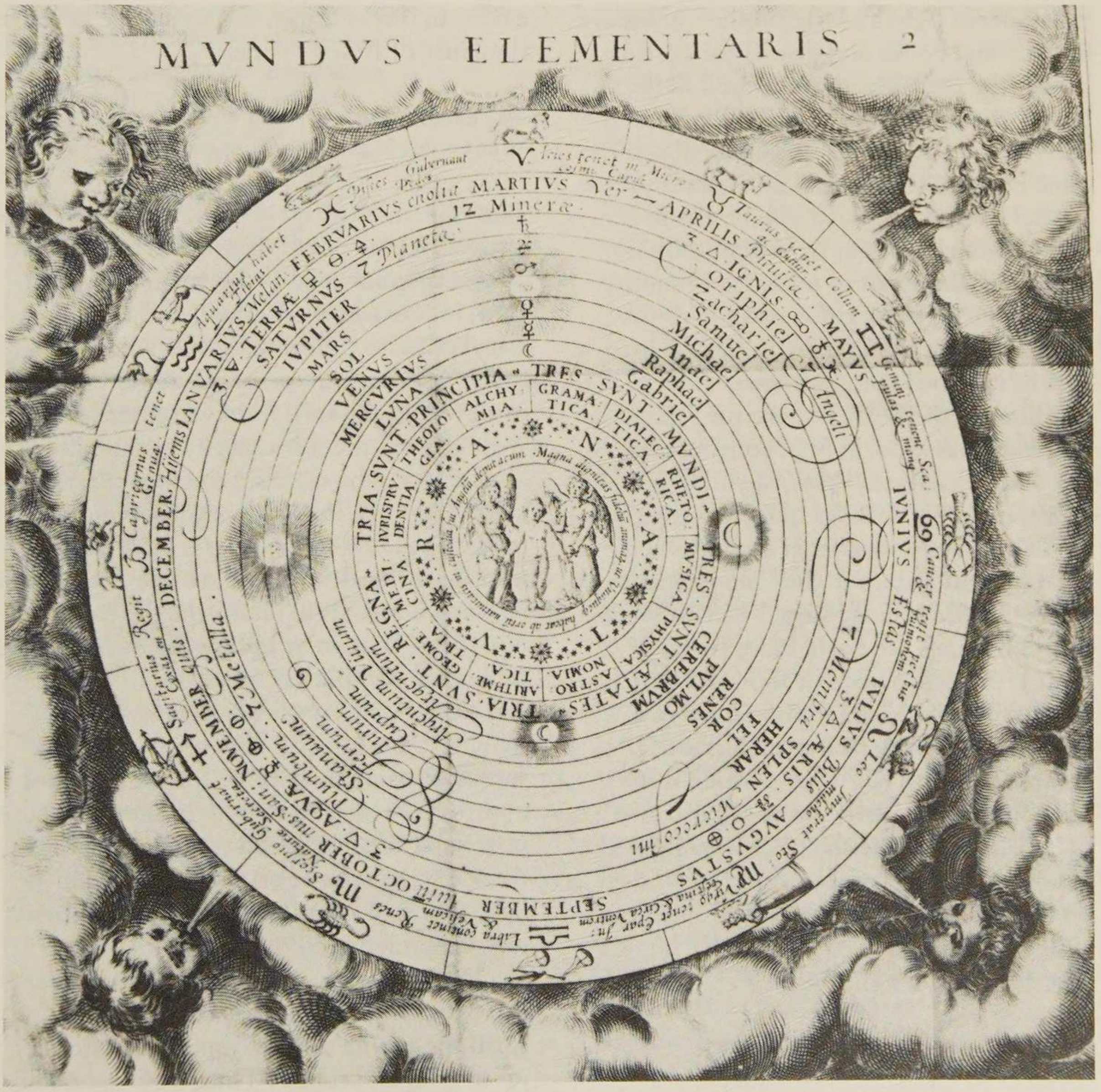
Another challenge to modernity stands in a courtyard of the Quwwat-ul-Islam mosque in Delhi, where the iron pillar erected by King Chandra Varmas in the fifth century has stood untouched by rust for 1500 years. Alchemists often mention ways of quenching the thirst for water in the inner core of iron.

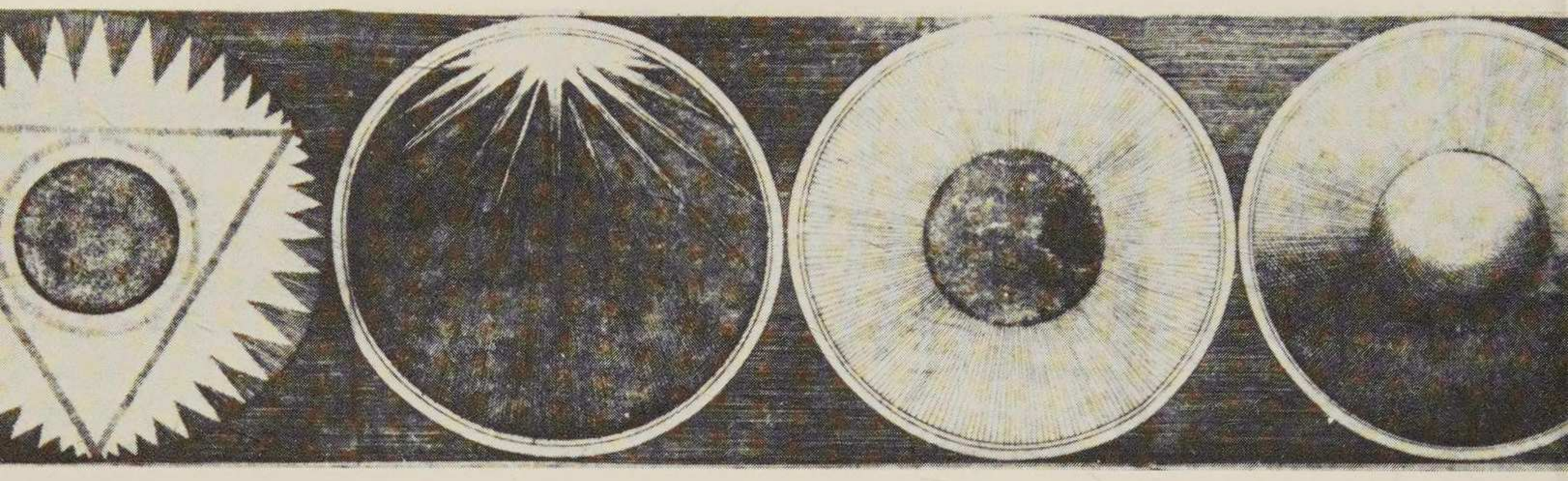
Products from the borderline between death and life were to the alchemist the main facts of life. It was said that from mummies there oozed out a medicinal oil that even restored vitality to dead wood, and revived dead flowers, and from the flesh of saints exuded an oil of such power that it passed through heavy slabs of marble. It was called *myron* in Greece, *manna* in Italy. Alchemists felt that it concealed the secret of vitality, and therefore looked with a knowing eye on such "popular superstitions" as the worship of the bodies of St. Nicholas and of St. Andrew, in Bari and Amalfi respectively. In Naples, a clot of the blood of St. January liquefies every year during the mild season, when the phial in which it is sealed is shaken amid scenes of wild communal invocation. Alchemists were interested in such phenomena as craftsmen. They thought that the body has the latent possibility of producing or releasing a life-giving and, in certain cases, glorifying substance—as certain trees pro-

duce balms capable of preventing decay, and as the metal-producing earth, given certain conditions, has the capacity for producing gold, in which the inner balance is unshakably stable.

For a better understanding of this point of view, the greatest attention should be given to those special moments in which this divine life-giving energy becomes tangential to the human level, in which the incorporation of that energy in a visible oil is openly revealed; when primal matter, the salt of life, is seen working unhampered, through the medium of the oil, on animal tissues. Alchemists felt that this divine energy showed an intelligence and an imagination, the very kind of intelligence and imagination they were bent on acquiring. They identified it with the essence of *light*. Al-Ghazali speaks as an alchemist when he says that light can be applied only metaphorically to anything that is not God, the Creator and the Sustainer.

Man subsists because this light, in its pre-visible form, imparted heat and motion to the pupil-like black spot, the *punctum saliens* of the embryo, and ever since uninterruptedly descends from the realm of pure energy into the heart, energizing it. Fludd explains that light, "this heavenly bread," was gathered in the aortal artery, whence it was apportioned out to the various winds or moving spirits of the body, from the highest intellectual ones to those of the will, and





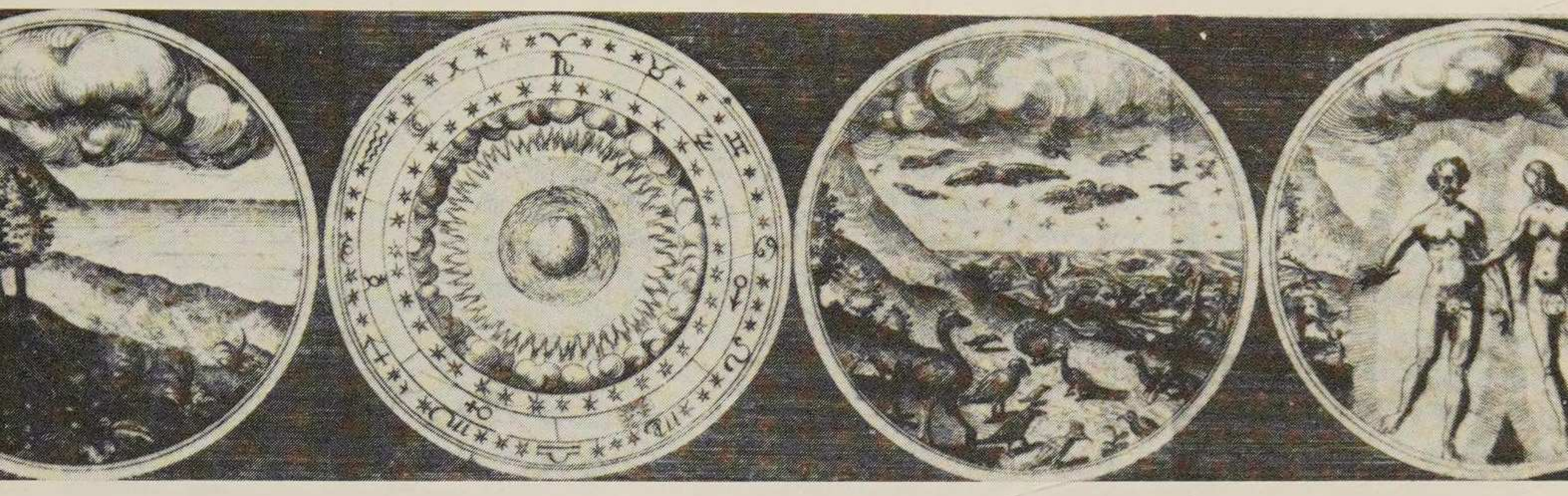
finally to those that attend to the physical functions. These rise up, are distilled, then refined back to their purest condition by the perpetual backwards and forwards motion through the labyrinth of plaited and interwoven threads of the circulatory system. In the spark of light and life, in the "heavenly bread" that cooks and distills the earthly bread (the lead-like mass of food in the body), turning it into golden blood and finally absorbing it into itself, an Alchemist must be at work. He, the invisible supreme Alchemist, is concealed in blood as in his choicest medium; but from it he exhales, becoming the spirit of man, man's inmost self: Inner Light. Scriptures all over the world allude to this: the *Chandogya Upanishad* talks about the small man in the secret chamber of the heart, where the essence of the cosmos is hidden; St. Peter expresses the same idea, with "the man hidden in the heart, incorruptible...a quiet soothing spirit." This Man within man is mentioned by the Emerald Tablet as the One substance thanks to whose adaptations and conjunctions all things are born. He is invisible; light is in itself invisible, and for the alchemists the Sun was in fact black. Its rays sparkle when they strike the terrestrial slime carried by the winds, which is why heat diminishes in the purer atmosphere that is higher above the earth. Sunlight penetrates the suspended slime and uses it as its vehicle, turning it into philosophic mercury. Sunlight behaves like sulphur, and is called, when it joins the slime, philosophic sulphur. The word sulphur is in Indo-European a compound of *suel* and *plos:* liquid sun.

The union of mercury and sulphur forms the salt of life, the life-giving good earth. In this context, life should be taken in the sense of Rumi's verses:

The earth is the warp and weft of thy body,
What holds it and fixes it together.

This "earth" or "sperm of life" hovers over us in the atmosphere. Up in the sky, when warmed, quickened and fermented by friction, it releases its sulphur, and the sky is streaked with lightning. Otherwise, this grace or salt of life descends as gentle rain or dew into the soil. Rain water and dew were among the substances most used by alchemists, who claimed to extract especially from the latter a potent solvent and a medicine. Dew in Sanskrit is *rasah* and *ṛṣen* means spermatic. From the same root comes also arsenic. This in fact is the primal product of the "sperm of life" when it is trapped in a crude, venomous soil. Other types of soil turned the "sperm" into antimony which, in the eyes of alchemists, was of a somewhat similar nature. The nethermost point reached by light in its descent into the bowels of this world was realgar. From these extremities of crudity, the soul of light could be extracted and turned into a powerful medicine.

In the bowels of the earth the spiral light combines with the various soils to form the whole scale of metals and stones, up to gold and rubies. Thus, loop upon loop,



the spiral of Light unfolds: everything is a gradation of light. Rumi wrote:

The beautiful sun is linked
to the embryo in the womb,
lends sparks to steel, ripens fruits,
strengthens the heart, changes stone to gold:
By hidden means, remote from our senses,
the sun in heaven has many ways
in the heart of the mountain
of making the ruby red.

It is the perfect balance of the components of gold and of rubies that interests alchemists, and they seek to capture the agent that achieves the miracles. In fact from all substances the alchemist endeavors to release the life-enhancing soul of light, to extract the particle of light that works each body into its proper shape—in other words, its pure form.

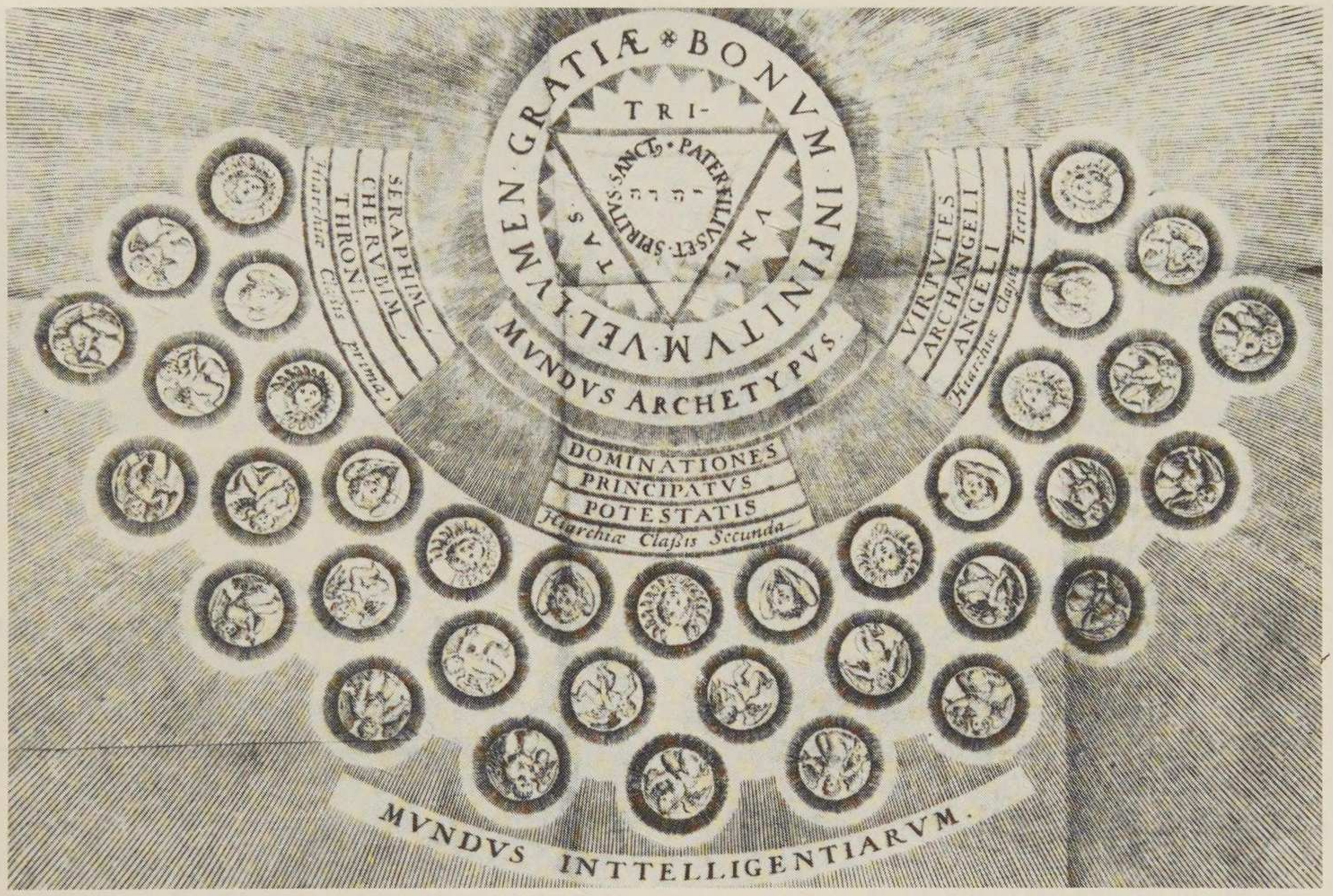
All this was comparatively easy with plants. One squeezed out their juice and kept it in a phial in the dark so that the light of the plant was prevented from joining the light of the atmosphere. Once fermentation had set in, the spirit or alcohol of the plant was extracted and thoroughly purified. It was called the "sky" of the plant, because it burned with an azure flame: Paracelsus called it *alcohol* because it was the subtle essence, as the powder of antimony, "kohol," is the subtilized mineral. With an intense heat the oils were extracted from the phlegm of the plant, whose hot and moist soul they carried. In the third phase, the residue was calcinated, distilled, recalcinated until it became a white salt. The three parts of the plant were then reunited, and formed the "stone" of the plant, that contained its triadic form detached from its matter in its furthest projection, as a ferment—incalculably more effective than the plant in its natural, unpurified state.

The alchemist is the redeemer of Nature, who appears to his eyes as imperfect and ailing. What else can the Zoroastrian *Gathas* or the Epistle of St. Paul mean, when they speak of suffering, moaning Nature, who depends on the redemption of man to be redeemed in her turn?

The sacrifices of bread and wine in various religions become eloquent in the light of alchemy; the two processes of brewing and baking are seen as a killing of the soul of the grape by its spirit, and of the spirit of bread by its soul. The reunion of the spirit and the soul in the sacrificial cup suggests the procedure of alchemical purification. Bread and wine are the flesh and the blood of the Cosmic Man.

Alchemists asserted that minerals and metals had first to be killed and then resurrected in glory. The primal task was to dissolve their bodies in a solvent, so that the metals and minerals as such were no longer appreciably present. Paracelsus explains that oils are to be distilled from metals "until the metal disappears," and then the oil has to putrefy and the viscous product must become white, to be dissolved further, first in wine and next in water.

The Hindu treatise, the *Rasārnava,* is even more explicit. Mercury mixed with



juices of many plants is distilled seven times, then mixed with copper and again distilled until no trace is left of copper-like or tin-like properties. Then the product is mixed with vitriol, alum, borate and alkalis until it finally disappears. At last we have "dead" mercury, in which there no longer remains any sign of mercury's moistness, mobility, sheen, weight, volatility; and yet into this new substance the *form* of mercury has been impressed. The explanation of this material disappearance on the one hand and formal permanence on the other we find in the *Dhyanabindupanishad* which says that the 100,000th part of a grain of rice is its soul, and that the 100,000th part of the soul is the Lord of the universe, whose 50,000th part is the Supreme Self; and still further beyond lies the Absolute. One is reminded of Whealer's present-day theory of the geometry of spaces inferior to one centimeter multiplied by ten and elevated to minus sixteen, in which space as such develops an energy superior to that of nuclear fission.

Alchemists thought that by processing substances according to their prescriptions the form was preserved and its energy heightened more and more as one proceeded with the dilution, beyond the disappearance of all appreciable traces.

One of the legends alchemists were most fond of repeating, and very often had sculpted in their houses, tells of the Sybil, who offered a Roman emperor her book of secrets. The Emperor refused to pay the price she asked, so she destroyed half of the book and doubled the price. The story goes on until the Emperor pays an enormous price for a minimal fragment of the book.

In recent years a most delightful "alchemical" riddle has set physicists wondering; the strange behavior of certain alloys of nickel and titanium, and eventually also cobalt, of gold and cadmium, and even of manganese and copper. A coil of one of these alloys is heated to a given degree and subsequently refrigerated and extended to form a straight line; when it is again heated, at a degree slightly inferior to the previous one, it coils back into the identical spiral. Where, how, was the memory of the past form preserved?

Hahnemann, the founder of homeopathy, worked along the lines of alchemy, though he never acknowledged it. Most of his writings seem to be an echo of Paracelsus. The fundamental idea of homeopathy is that illnesses are factors preventing certain spirits in the body from functioning properly, and that the disturbing factor and the illness must be of an identical nature. That man contains everything in nature, and that we become irritated by external things because they lie inside us, had on the other hand already been among the basic teachings of Boehme's alchemy.

Another of Hahnemann's procedures that I suspect of alchemical origin is the rhythmic shaking of his medicines. Borrichius gave a prescription for the extraction of the sulphur or oily soul of gold: a veil of powdered gold "shaken" for a long time and then heated in a retort will yield red drops of oil. I suspect Norton's *Ordinall of Alchemie* is suggesting something about the uses of rhythm in the lines:

Joyne your Elements Musically
For two causes, one is for Melody:
Which their accords will make to your mind,
The true effect when that ye shall finde
And also for...Harmony.

Besides actual "shaking," the number of circulations in the alembic might also have been a means of imparting a certain influence on the substance.

I have proposed that the preliminary condition for understanding the aims of alchemy is total empathy. But even this may not solve the problem of the texts.

Their general frame of reference is metaphysics, and since all religions are based on metaphysics, their transcendent meeting-ground, any religion may be used to formulate alchemical truths. All theological idioms are suitable vehicles of the alchemical tradition. This is obvious in Islam; it could easily be proved of Zoroastrianism, and is evident in Hinduism and Taoism. Buddhism also expounds alchemy in its own terms; we find clear proof of this in the *Kevaddha Sutta* and the *Agganna Sutta,* in which the substance beyond the elements and the luminous precosmic Man are dealt with.

Alexandrian chemists speak in terms of Egyptian mythology, and during the Renaissance the habit of representing alchemy in the symbolism of ancient mythology was revived. In Byzantium, alchemy became Christian: up to the eighteenth century it was explained in terms of Christian theology; the creation of the world in Genesis was widely interpreted as an alchemical opus. The tree of the knowledge of good and evil carried fruits containing burning sulphur and corrupting humidity or mercury, and after eating them, Adam, who was golden, suffered the fate of gold that is poisoned by the fumes of lead. He had been created out of dust *(aphar),* which was interpreted as the powdered sulphur of gold *(ophir).* A golden body was needed to redeem him, and Mary was the result of a pure semen of red earth, of an alchemical semen dropped on her leaden womb, whereby a transmutation of the flesh took place: an immaculate conception. The Virgin was the philosophic mercury or solvent of bodies, as Isis had been in ancient Alexandria. That the Mass was on the other hand an alchemical opus was a widespread notion in the seventeenth century. But besides metaphysics and religion, alchemists used puns and riddles and picture puzzles, and even playful deceits and cryptograms. They sometimes practiced a sort of pictorial shorthand writing, as when Aries, the first month, stands for the primal matter. It is a sort of "intentional language" like the language of Tantra, in which monkey stands for mind, and crocodile for lungs, because the latter is slow and the former swift.

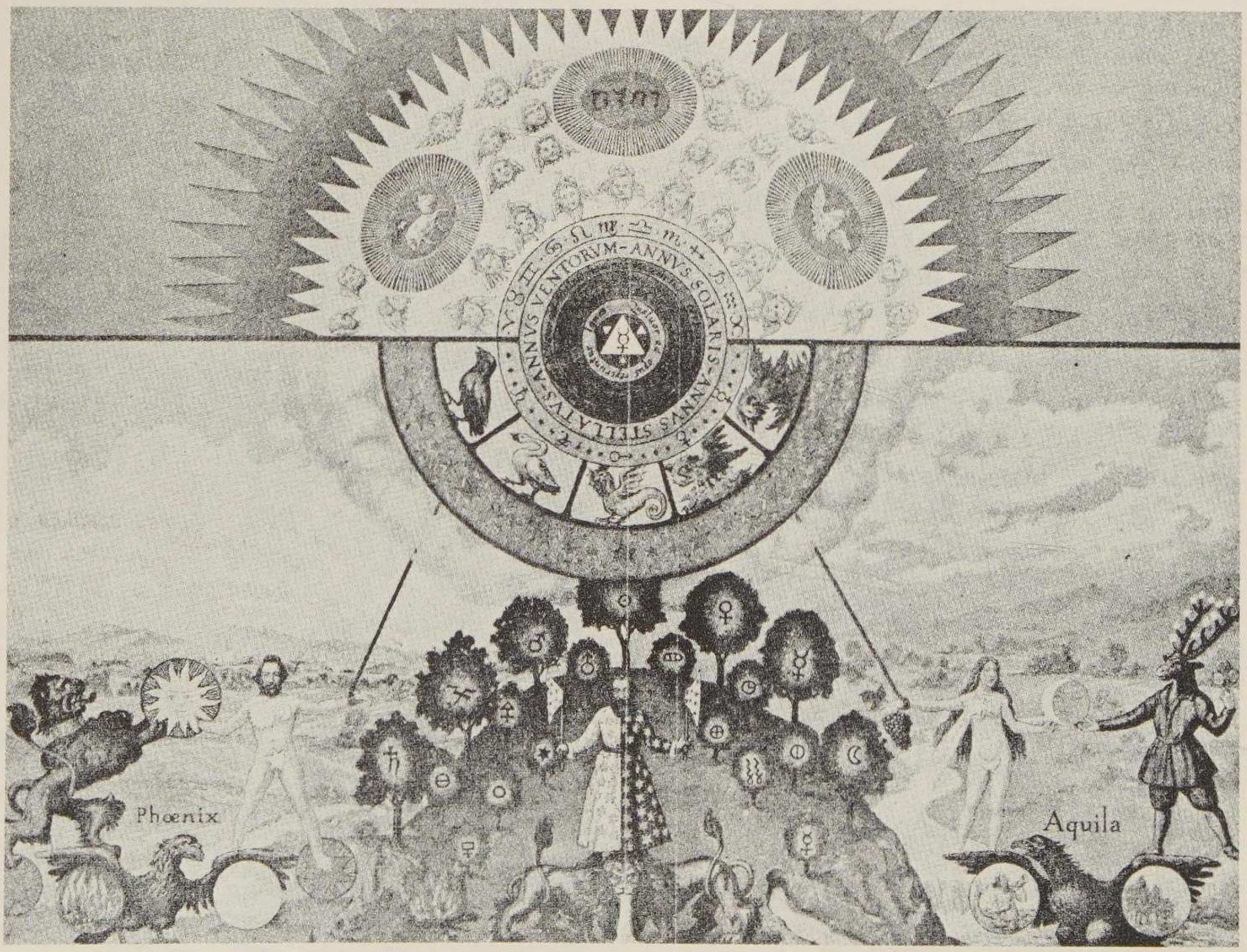
We have in alchemy the same admixture of idiosyncratic allusions and universal symbolism as in Safavid rugs, which are bordered with peonies *(zakar)* because these are written like *zikr,* invocation. In French alchemical texts,when we read *crab* it might refer to a crab and to the symbolism univer-

sally connected with crabs, but it also might mean distillation or the resulting oils, since the Greek word for crab, *astakos,* was akin to *staktos,* distillation, and to *stakte,* oil. French alchemists in fact used false Greek etymologies to dissemble their meanings. Fulcanelli has his own way of suggesting as much when he embarks on a funny sham-erudite defense of the joking thesis that French derives not from Latin but from Greek. He means, of course, alchemists' French. The custom must have been picked up from Jewish esotericism, in which it was common to attribute Greek etymologies to Hebrew words since the times when Philo interpreted as Greek the names of the rivers of Paradise.

All this makes the going difficult enough, but when it comes to top secrets the ingenuity becomes even more subtle. When one isolates according to a certain division of space certain sections of an innocent-looking page of Roger Bacon, the formula for gunpowder results. An English wartime breaker of military codes discovered it.

If more of the alchemical "code" is to be deciphered, a definite program is called for. Once the data concerning the interpretation of alchemical jargons are gathered, there should be a selection of the main terms and a tabulation of the various clusters of words in which they are to be found. Of course, only texts of an assuredly traditional character should come in for consideration. This alchemical dictionary should be founded on the texts themselves, with no interference on the part of the compilers.

After this second phase, the various dictionaries of the different traditions could be compared. At this point the greatest results would be reaped. Many secrets would then lie open, because the area covered by the law of secrecy in the various traditions is not the same. I may mention that many





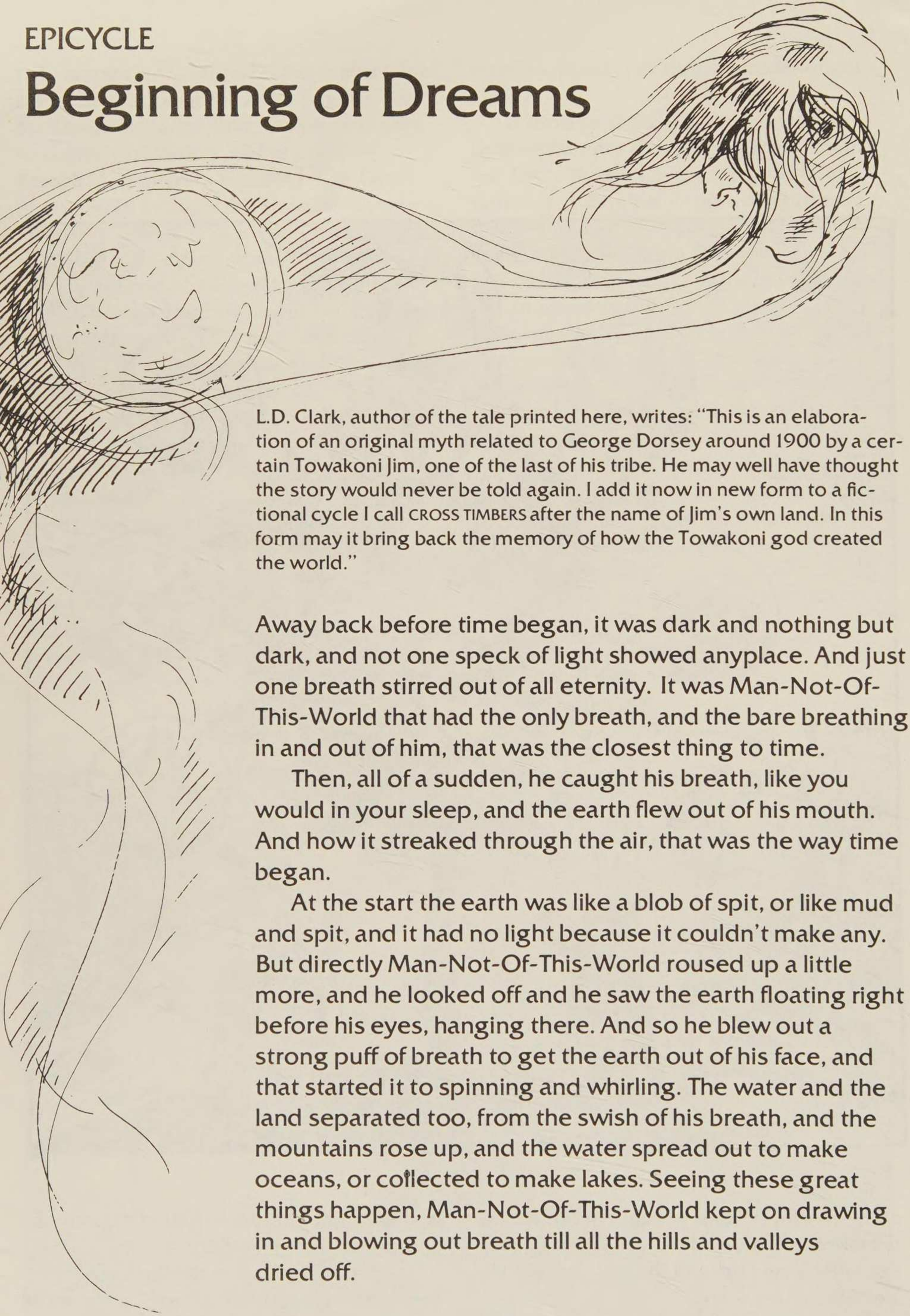
otherwise mysterious passages in European texts become clear when read in the light of disclosures contained in the writings of the Persian *shaykya* school.

Most important of all, contact should be sought with the living representatives of the alchemical tradition, such masters as were Ogotemmeli the Dogon or Black Elk the Oglala Sioux, who might be willing to reveal the right interpretations to persons of unimpeachable objectivity.

This program defies the forces of a single researcher. Only an association could attempt the tabulation of the data, the comparison of the schools, the whole grandiose task of a new spiritual archaeology.

EPICYCLE

Beginning of Dreams



L.D. Clark, author of the tale printed here, writes: "This is an elaboration of an original myth related to George Dorsey around 1900 by a certain Towakoni Jim, one of the last of his tribe. He may well have thought the story would never be told again. I add it now in new form to a fictional cycle I call CROSS TIMBERS after the name of Jim's own land. In this form may it bring back the memory of how the Towakoni god created the world."

Away back before time began, it was dark and nothing but dark, and not one speck of light showed anyplace. And just one breath stirred out of all eternity. It was Man-Not-Of-This-World that had the only breath, and the bare breathing in and out of him, that was the closest thing to time.

Then, all of a sudden, he caught his breath, like you would in your sleep, and the earth flew out of his mouth. And how it streaked through the air, that was the way time began.

At the start the earth was like a blob of spit, or like mud and spit, and it had no light because it couldn't make any. But directly Man-Not-Of-This-World roused up a little more, and he looked off and he saw the earth floating right before his eyes, hanging there. And so he blew out a strong puff of breath to get the earth out of his face, and that started it to spinning and whirling. The water and the land separated too, from the swish of his breath, and the mountains rose up, and the water spread out to make oceans, or collected to make lakes. Seeing these great things happen, Man-Not-Of-This-World kept on drawing in and blowing out breath till all the hills and valleys dried off.

But all this time it was still dark.

And it was all just empty: bare ground and stagnant water, and that didn't suit Man-Not-Of-This-World. And so he blew again and sent the water to trickling and pouring till it dug out branches, creeks and rivers. But still he wasn't satisfied, so he blinked his eyes and thought and man and woman popped into his head. So on a creek bank, then, he touched a couple of balls of mud and blew his breath on them, and there they were: man and woman. The man he named Come-And-Carry-Light, and the woman he named Bright-Shining-Woman.

But still there wasn't any light.

Man-Not-Of-This-World told the man and the woman how to sleep, and how to dream. And whatever they dreamt about, he said, when they woke up it would be right there beside of them. That was how they had to come by what they needed to live on.

The first dream that ever was happened to Come-And-Carry-Light. He thought he was standing in a big wide empty space. He commenced to feel the earth straining under him, and a chill ran all over him that something was coming to him out of the air. He backed up to get away from it, whatever it was, but there was more than one of them, this shape of a thing. He could make out how they stood firm on the ground close to him, and how they rose up and spread out. His dream made him go up and put his arms around one of them, this shape of a thing. It rose up round and rough for a ways, then it had like arms reaching out in every direction, and little kinky knobby finger things that stuck out all around the arms, and like flakes in thick bunches that came out of the kinky finger things. He felt of this shape as high as he could, and after a while it came to him he had dreamt a tree, a postoak tree. Then he felt the whole space all around him fill up with trees. Not only oak trees, either, but wild plums and cherries and apples and

haws, and on the postoaks, grapevines. And all these things his dream let him know were good to eat. And his dream went on to tell him that he could pull pieces off of the trees and build a place to get in out of the weather.

And then just as he was coming awake, his dream told him that not long off a thing more magic than a house would come out of the oak tree.

It was just a little while after that when Come-And-Carry-Light went to sleep again and had another dream. He heard a voice telling him to go west, and till right then he didn't know there was any such of a thing as west. So he went towards what he took to be the west, and Bright-Shining-Woman went with him. Further and further they traveled, but still he didn't know what it was they were going after. A long time, and then he saw on ahead of them a hut like his other dream had told him to make. And another man, or like a man, was standing there by the hut. "Well," he said. "I'm the one that brought you over here." And it was Man-Not-Of-This-World. And he went on to say, "I'll tell you what. It won't stay the way it is. It won't stay dark."

For a minute he hushed, and then all of a sudden he reached out both hands towards Come-And-Carry-Light and said, "Dream a fire!"

Now Come-And-Carry-Light had no idea at all what that was, a fire. Still he didn't feel like asking. All he could think of, after a little, was that it might be the great magic thing his other dream had told him would come out of the postoak trees. Once he'd thought of that he began to feel something away off that was the complete opposite of anything he'd known about up to now. Even a little bit of it hurt his eyes, but it made his body feel warm, when up to now he hadn't even known his body was cold. He was getting closer to it, or it was getting closer to them, to him and Bright-Shining-Woman. And so now he saw it was an oak

tree, but not like the other trees, for it was covered all over with something that moved like a wind, but a wind that danced and swirled and dazzled his eyes. It didn't have the look of darkness, but an absolute other look, and a whirling and flickering the opposite of the stillness of dark.

So he knew he had dreamt a fire. And when he woke up, lying in the hut he had built of the bark of oak trees, he saw, a good piece off on a hill, the burning tree that he had dreamt. He got right up and went out to it. He picked up a blazing limb and brought it back to the hut. After laying it down in front of the door, he called Bright-Shining-Woman out of her sleep, and they went out and gathered up other branches and carried them in to keep the fire burning on and on.

By now they knew that wasn't all. More than that had to be dreamt. So they sat by the fire and wondered what it was, and waited for the right dream.

It wasn't a great while in coming. Come-And-Carry-Light dropped off to sleep and there was Man-Not-Of-This-World again, who said, "You better get a move on. What're you sitting there for?" And all Come-And-Carry-Light could think to say was, "Well, you don't want me to leave the fire just with her, do you? It's my dream. She might forget it if I go off."

But Man-Not-Of-This-World's only answer was, "You don't have much time. You'll need a bow and some arrows, because any minute now the deer'll be coming out of the timber."

None of these, deer nor bow nor arrows, had Come-And-Carry-Light ever heard of. But still he had to dream them, and he had to do it faster than he'd ever have thought he could. First he had to leave the fire in charge of Bright-Shining-Woman, whether he wanted to or not, and to run off into the darkness again, because that's where the



deer must be dreamt. The hardest thing in his life yet was to stay asleep out there, away from the fire and the woman, to keep the dream coming. But he managed it.

He was all flustered though, looking all around and not knowing what to do next. Until his dream told him to hack on some tree branches with sharp rocks, and he did that.

"Come on, hurry!" said Man-Not-Of-This-World out of the darkness. "And I mean hurry. Because yonder they come, the deer."

So Come-And-Carry-Light knew his dreaming was all mixed up, but he just couldn't help it. And he had his fingers all thumbs. When he hurried up to make the bow and arrows everything fell apart in his hands and he had to start all over. Finally he did get going good, though, and every time Man-Not-Of-This-World told him to hurry he could yell out something like, "Now I've got the bow scraped," or "Now I've got some arrows peeled," or "Now I'm sticking feathers on," or "Now I'm putting on the bowstring."

And on it went like that. And already the deer were passing by, and they kept on coming out of the timber fast, like they'd every one be gone before Come-And-Carry-Light got ready for them.

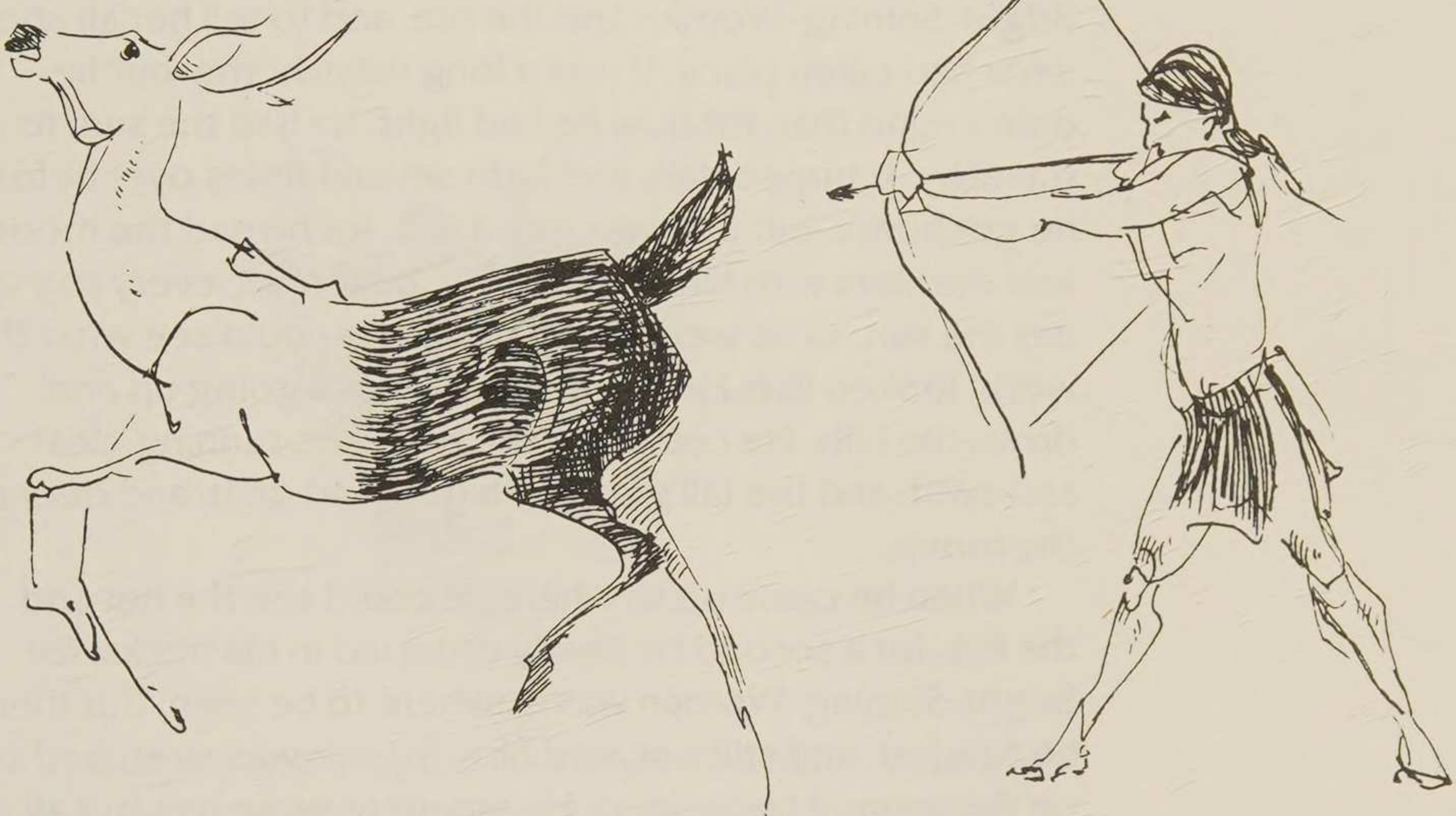
Finally he was ready to shoot.

"No! Hold on here!" Man-Not-Of-This-World hollered out. "You see the black ones? You see the white ones? You don't shoot them. You wait for the last one to come by, for he'll be half black and half white. And don't miss him, for he's the only one."

And then, before you know it hardly, he was right there, the deer half black and half white. So Come-And-Carry-Light shot, and the deer fell. But lo and behold, he got right up and ran off again.

And all Come-And-Carry-Light could think to do was stand and cry.

But then Man-Not-Of-This-World told him no, that was good, what had happened. It meant from now on every-



thing would move. The sun and the moon and the stars would rise and set, day and night would follow one another, dark and then light, light and then dark. And this way Come-And-Carry-Light knew that the most wonderful and enormous things of all were on their way into his dream.

But that wasn't all of it, the sun and the moon and the stars. Man-Not-Of-This-World went right on to say the deer was to be killed but the deer would never die. The deer was to eat, and that was holy. As long as men lived on earth they'd eat the deer. But if ever they failed to keep the deer holy, the deer would die for good and everything would fail to keep men alive.

And then Man-Not-Of-This-World was standing away off on a hill you could barely see, and he said, "Watch." And the sun came up.

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Then Man-Not-Of-This-World was no more to be seen. Come-And-Carry-Light headed out for home, to see Bright-Shining-Woman and the fire, and to tell her all about what had taken place. It was a long ways home, but he didn't mind that, for now he had light, he had the sun, to travel by. It turned dark and light several times over before he got home, but that was good too, for he had the moon and the stars with him. And maybe best of all, every day under the sun, as he went along home, he could see what the world looked like. He could see the oaks going up and down the hills. He could see the branches running clear and swift, and the tall grass with the wind on it, and deer on the move.

When he came up to where he could see the hut and the fire, for a second he nearly dropped in his tracks, for Bright-Shining-Woman was nowhere to be seen. But then he saw her, and still it scared him, for she was stretched out on the ground fast asleep. He ran up to wake her, but all of a sudden he stopped, because he could tell by looking that she was having a dream.

In her sleep Bright-Shining-Woman thought she was in a big open empty place, and something long, hard and round came floating up. She reached out and took hold of it and started walking away carrying it with her, though she couldn't think what it was nor what it could be for. But the more she walked the more she could feel her dream telling her what it was, and finally it began to form in her mind that this was an ear of corn, and that it was something to eat, and you had to call it holy besides. Now she could hear a voice telling her that as long as men lived on earth they'd live by corn. But if they ever failed to keep it holy, the corn would fail too, and life would end.

So she woke up and there was Come-And-Carry-Light. Now they had corn to plant and animals to hunt, and they had both dreamed the same dream about them.



The next thing they did was to climb a hill to look at the world under the sun. They got up high enough so they could see away off yonder east, and if they turned right around, away off yonder west. They could see where the hills and the timber quit, in the east and in the west too, and the prairie that started from there. They noticed many places to plant corn, and animals all over the glades. Then that night they both had the same dream again. Their dream told them that this timber country laid out between prairie on the east and prairie on the west was their own. This was the center of the world, the dream said, and it would always belong to Come-And-Carry-Light and Bright-Shining-Woman and all the people coming after.

— Retold by L.D. Clark

Ice Age Art and Science

by Bart Jordan

Ice Age Art
The American Museum of Natural History
New York

An exhibit of the golden age of Ice Age art, featuring about 250 items and staggering in its implications, has recently opened at the American Museum of Natural History in New York City. From the moment we enter this astonishing exhibit, we feel, each in our own way, a sense of communion with the distant past of 30,000 or more years ago. We sense that our cultural roots are here in this place. The physical space is small, but the spiritual space is vast.

Immediately to the left and right of the entrance to this veritable womb of Time are panoramic photographs of the area surrounding the Ice Age cave of Font-de-Gaume in France. In and around the center of the entranceway is a broad view of the Dordogne region (where so many important finds have been uncovered), a fine engraving of a mammoth, an actual mammoth foot, a large mammoth tusk, and a reproduction of an exquisite cave-painting of some reindeer.

Nearby is a highly informative climate chart showing the difficult conditions under which all kinds of life had to be sustained while the great sheets of glacial ice dominated much of Europe and Asia. Life and culture prevailed despite the harsh conditions imposed by the ice and the intense cold. The major Upper Paleolithic cultures of Europe and Asia highlighted in this exhibition are represented as being five in number:

1. West European, or Franco-Cantabrian: c. 35,000-10,000 B.C.,
2. Mediterranean, or Italian and East Spanish: c. 22,000-8,500 B.C.,
3. Central European, or Czechoslovakian (Moravian): c. 28,000-10,000 B.C.,
4. East European, or Upper Ukrainian: c. 28,000-10,000 B.C., and
5. Central Siberian, or Lake Baikal: c. 20,000-10,000 B.C.

For both animal and man, the climatic conditions which existed 35,000 years ago and which persisted for almost 25,000 years made life difficult in much of Europe and Asia. Agriculture, such as we see it in the warmer periods following the Ice Age, was impossible. The Ice Age peoples hunted and gathered what Nature provided for them. They survived and they created. They developed to an inordinately high degree of sophistication the very art we view in the present exhibition. That it is their art and that it does embrace an extraordinary range of styles and techniques is now admitted. However, as the *Time* magazine report of the exhibition pointed out, this was not always the case:

> When the first of these subterranean galleries was discovered in Spain nearly a century ago, Europe's savants, still reeling from the shock of Darwinian evolution, refused to believe that the find was anything more than a hoax. Since then, nearly a hundred richly decorated prehistoric

caves have been found in Spain and France, and the existence of paleolithic painting has been established beyond doubt.

Leaving the entranceway, we come into a room filled with a wide variety of animal, fish, bird, snake, and insect depictions which were done by Ice Age artists from each of the major cultures cited above. There are powerfully rendered bison and boar, a magnificent Irish elk, ibexes, horses, bears, lions, wolves, rhinos, aurochs, butting mammoths, an indolent musk ox, a pert hare, and a skulking wolverine.

Whether we view the Ice Age artists' pictorially captured creatures in the beautiful silk-screen renditions by artist Douglas Mazonowicz, the vibrant photographic reproductions by Jean Vertut, the Altamira ceiling frescoes in replica, or the detailed casts of engravings and carvings painstakingly copied by various members of the museum staff, we experience the feeling that many behind-the-scenes persons cared very greatly that the objects should be as close as possible to the originals. Due to their efforts and those of Alexander Marshack, the curatorial consultant, and designers Henry Gardiner and Margaret Cooper, the exhibit does permit us to appreciate more deeply Upper Paleolithic art and the peoples who created it.

❖

As we move through the collection, we become increasingly aware that the Ice Age artists valued almost every observable aspect of life that they encountered. Their art was based on encounter—physical, emotional, and intellectual encounter. They could not have done what they did without this last, without *thought.* However, the unthinking popular judgment of them has been that they did not think, at least, not on an advanced level. The common view held of Upper Paleolithic peoples, especially of Neanderthal males, is that they ran about clad in little more than the smiling state of nature, that they wielded oversized clubs to batter wife or foe into submission, emitting meaningless *macho* utterances in *basso profundo.*

The popular view is hardly justified and has never been held by the more perceptive of archaeologists and anthropologists. One of the exhibition's captions by Marshack addresses the question of Ice Age man's intelligence:

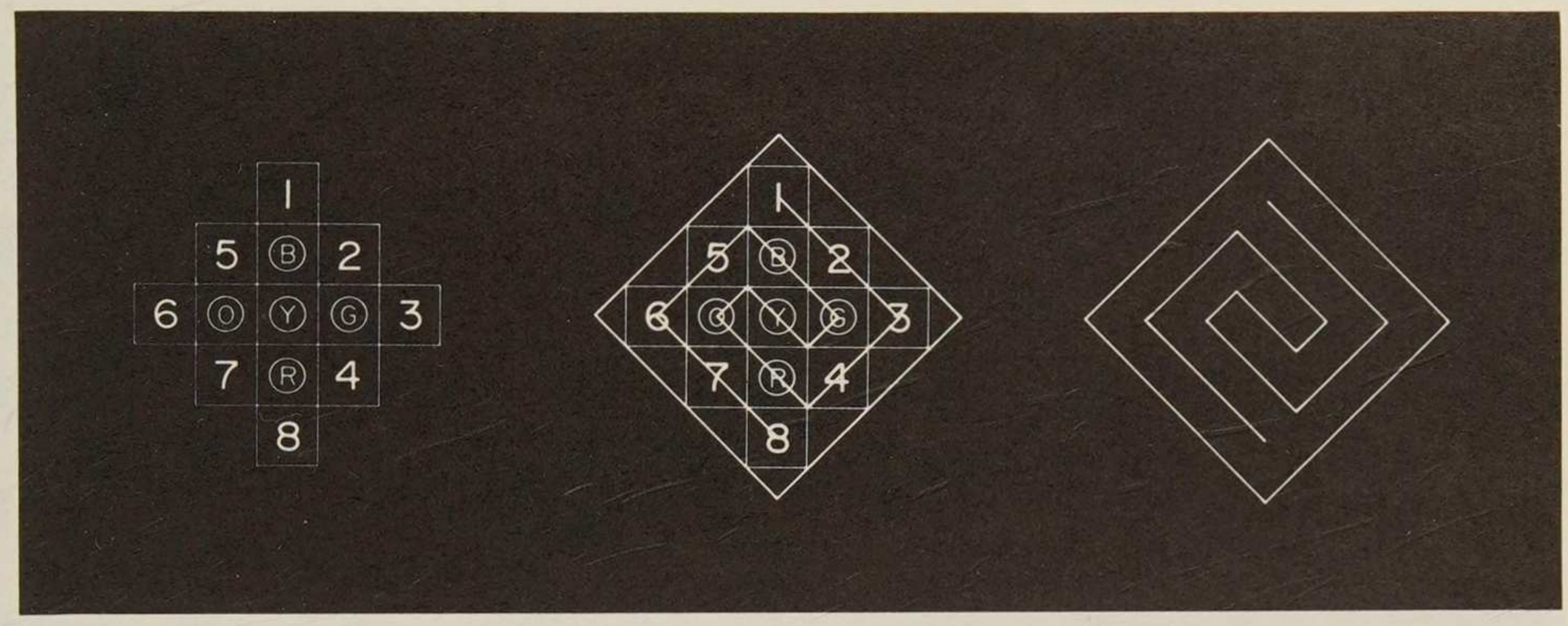
> An early type of Homo sapiens, Neanderthal man had a brain as large or larger than that of modern Homo sapiens. Neanderthals lived in Europe and Asia from about 100,000 to 35,000 B.C. and made beautiful stone tools, buried their dead, had other rituals, used red ocher and fashioned simple symbolic objects.
>
> Modern man in Europe, popularly called Cro-Magnon for the site in France where the first skeletons were found in 1868, arrived with a new tool kit and more complex tradition of making and using images. There was probably no sharp difference in intellectual capacity between these two human types. But carvings such as the pendant, the Vogelherd horse and early female figurines suggest a use of image and symbol by Cro-Magnon man requiring a more complex use of language and more complex social relations than are suggested by Neanderthal symbol.

Does Marshack go far enough in his assessment of Cro-Magnon's cognitive capabilities and use of symbolism in image-making? Regrettably, he does not. In both the exhibition captions and the Ice Age Art catalogue he prepared, Marshack avoided any mention of the growing body of evidence which shows Cro-Magnons to have developed some of their most artistic symbols and images in direct relation to various mathematical expressions of time. Ample evidence is provided through their art that the Cro-Magnon peoples recorded meticulously and accurately the diverse periods of day or night, sennight or week, fortnight, "common law" month (28 nights), lunar-menstrual year (364 nights), average year (365 days), and leap year (366 days). Cro-Magnons, not limited to mere counting as Marshack has publicly maintained, transformed their carefully obtained counts into mathematical equations and then artfully symbolized the equations themselves.

This exhibition misses the mark by neglecting to reveal that part of the Ice-Age peoples which makes them, in my view, far more than crude artisans toiling over lumps of clay and shards of bone, shaping and scraping them, through happenstance, into rough images of themselves and their world. Let us examine a few of the items which were included in the collection or excluded from it, to see what might have been brought to the public's attention had the exhibit presented Ice Age art not as art alone but as science as well.

One of the more revealing items in the collection with regard to art as an expression of science is the renowned meander bracelet of ivory from Mezin in the Ukraine. The bracelet has often been cited solely for the artistic value of its elegant patterning. However, the significance of the meander symbol which underlies the bracelet's geometrical ornamentation elevates this Mezin masterpiece to a plane far beyond the realm of art alone. The meander itself is a mathematically ordered symbol: a compressed graphic shorthand way of diagramming a year.

Utilizing such diverse source materials as early Chinese astronomical data, a commentary on Pythagorean mathematics in Plutarch's *Moralia,* and information gleaned from concentrated study of Venus masks throughout the world, I was able, by the mid-1960's, to reconstruct successfully an early calendrical diagram which, upon completion, revealed the meander to be at the very core of the diagram's structure. This diagram, which was eventually to provide the foundation for the great symbol systems and calendars of both the Old World and the New, shows the average year to have been calculated at exactly 365 days by Ice Age astronomers, and consists of thirteen compartments (considered "celestial halls" by the ancient Chinese and other cultures). By referring to the first of the three illustrations appearing below, it will be seen that the eight outer compartments contain the counterpoised numbers of

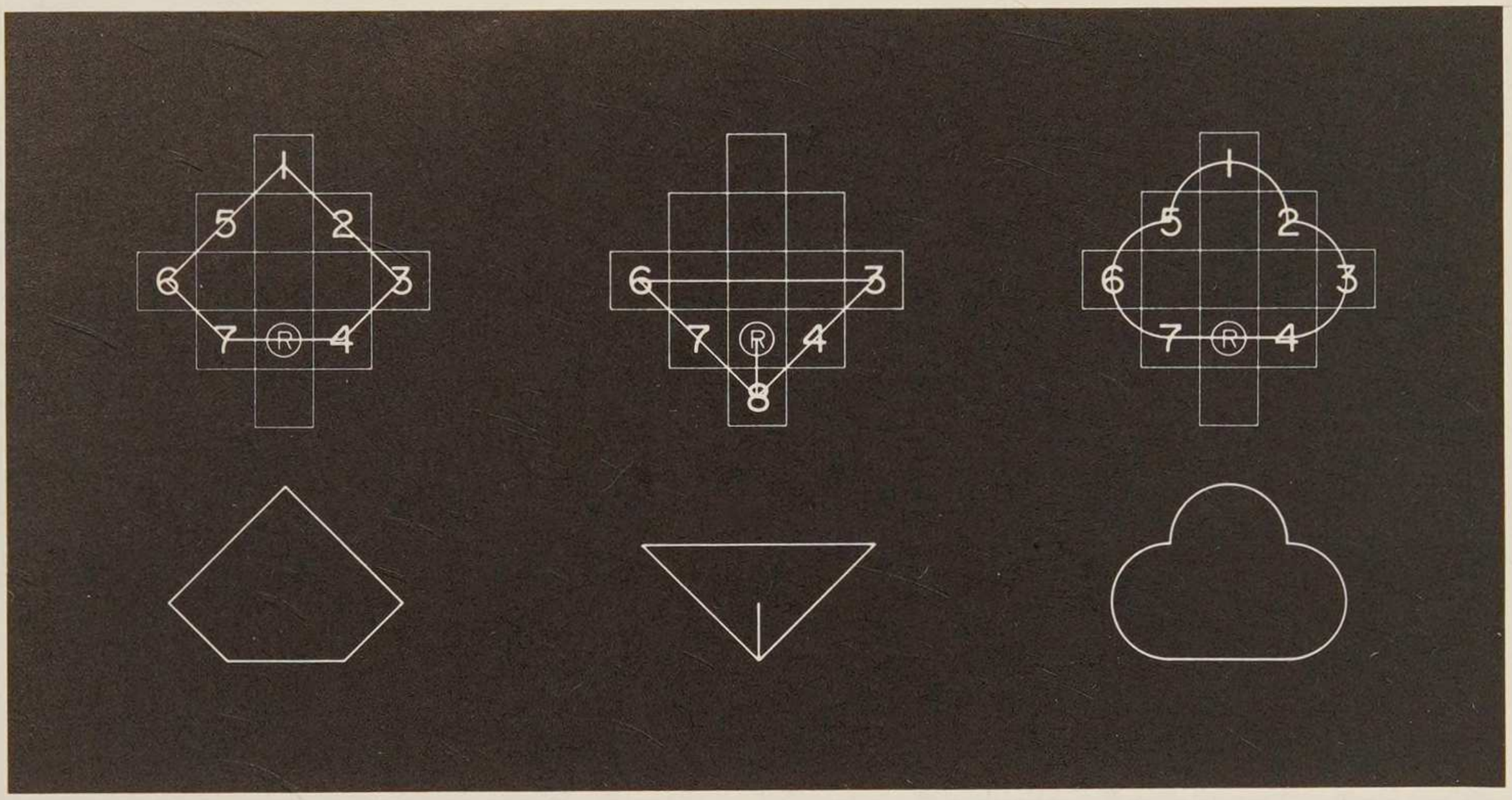


1 through 8 (North-1 opposite South-8, Northeast-2 opposite Southwest-7, East-3 opposite West-6, and Southeast-4 opposite Northwest-5). These eight numbers add up to four nines, or 36, which signifies four ninety-day divisions, or 360 days. The five inner compartments contain the five additional days of the 365-day year. These five days are designated by the five principal rainbow colors, which are also associated with the five principal directions and the year with its four seasons (red for South/Summer Day, orange for West/Autumn Day, yellow for Center/Year Day, green for East/Spring Day, and blue for North/Winter Day.

Therefore, the meander symbol itself derives from the simple fact that a single line, beginning at North-1 and moving through the 13 compartments in strict numerical and spectral sequence, progresses clockwise to the yellow of Center/Year Day and then progresses counter-clockwise until it reaches the terminal point at South-8 with the result that the entire 365-day calendar diagram is embraced and expressed. These illustrations should enable anyone viewing the exhibit in future to understand more about the scientific basis for the meander patterning of the beautiful Mezin bracelet.

The meander is only one of many Ice Age calendrical symbols attesting to Cro-Magnon's extraordinary ability to express the abstract in both art and science.

It would have been important for the fundamental menstruation/gestation symbols of the art to have been presented and explained in the current exhibition. Omis-

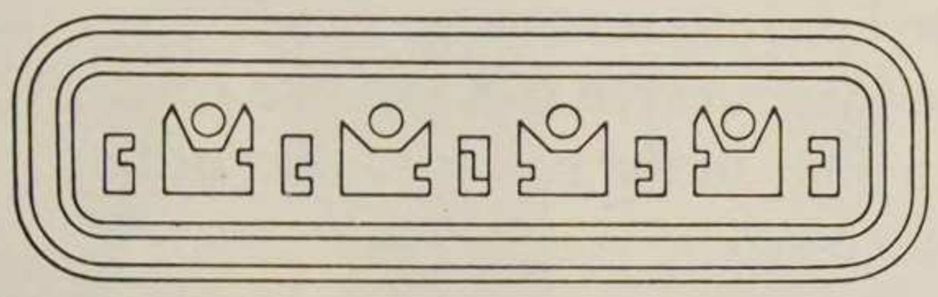


sion of the information concerning them is almost as indefensible as the omission of information concerning the meander. Above are illustrations which will acquaint the reader with some of these symbols and with the method of their construction.

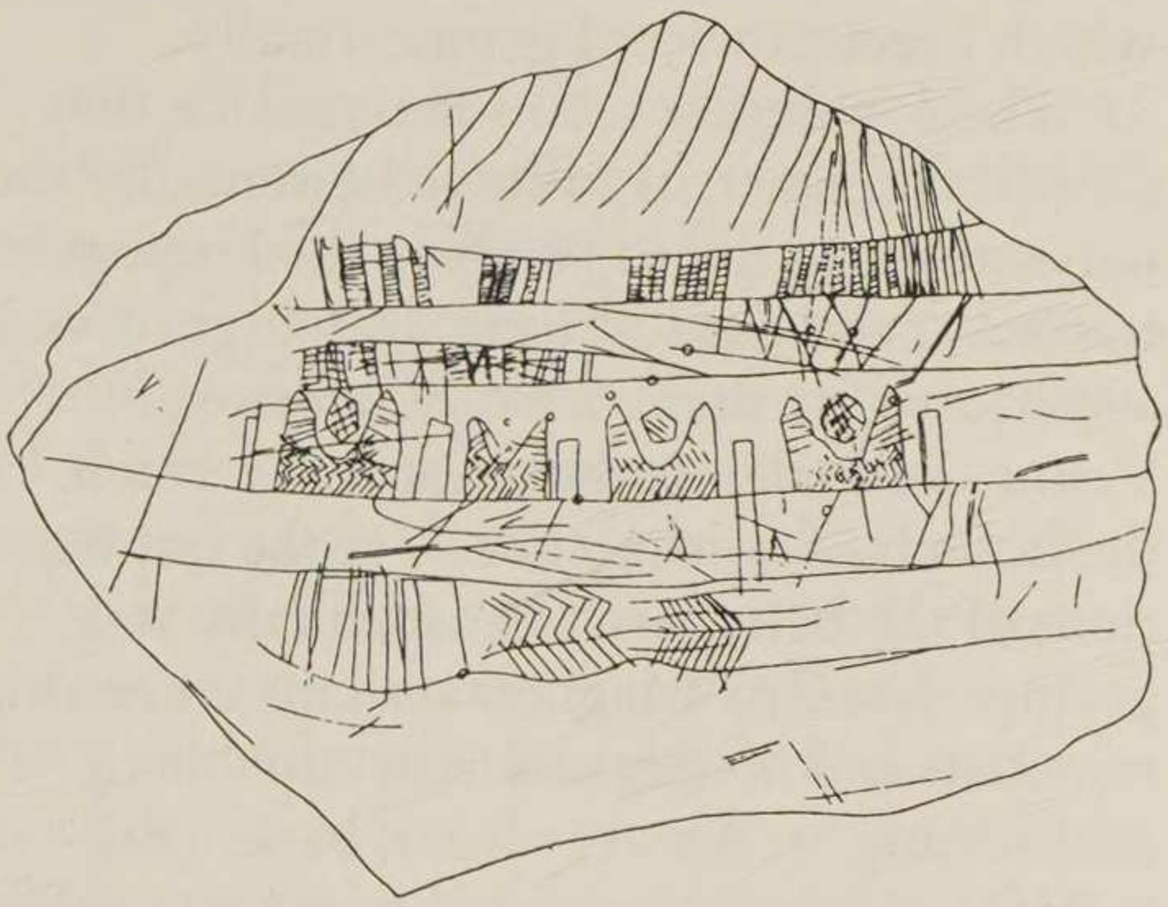
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Also not shown in the exhibition is an engraved mammoth bone from Mezhirich in the Ukraine excavated by I.G. Pidoplichko and reported by him almost a decade ago. This unique bone constitutes a vital omission in that the primary engraving on the bone appears to relate to a major calendar symbol of probable Ice Age origin. (See facing page.)

If the time-formulae have been discerned correctly, especially with relation to the planet Venus, then there is no question that the engraved mammoth bone from Mezhirich is one of the most remarkable finds ever to have emerged from the Ice Age. Why it has been omitted from the exhibition is beyond my comprehension. Whatever Marshack's reason for its present omission, one would hope that the bone and a brief explanation of its apparent significance will be entered into the collection before the exhibit leaves New York. Irrespective of any scholarly controversy which might attend the bone as to its final inter-



A calendar symbol reconstructed by the author before seeing the bone below. Five notched rectangles embrace four notched "horns of consecration." Reading from right to left, these four figures with their four circles (Sun, Evening Star, Morning Star and Moon) signify Summer, Autumn, Spring and Winter. Each season has 90 days, totaling 360. The 5 notched rectangles signify the remaining 5 days of the 365-day year. Less obviously expressed are the additional time-formula of 364 nights for the lunar-menstrual year, 366 days for the leap year, and 584 days for the average synodical revolution of Venus.



The main difference between the symbol above and the mammoth bone is that the notched element has been replaced by a zig-zag motif. The zig-zag motif may well have been taken from the famed "magic square of three" which utilizes a zig-zag configuration to link the numbers 4, 3, 5, 1, and 6 together as a year formula. When multiplied, these five numbers result in 360, the remaining 5 days being represented by the fact that there are just five numbers in the formula. Investigations have shown that scratches outside the central symbol were made at a later date.

pretation, the public has the right to know of its existence, to view it firsthand, and to have an explanation as to its probable significance. The public would then be put in touch with what may be one of the most astonishing scientific achievements of our Ice Age forebears.

For many observers, the most enigmatic yet appealing items in the entire show are the diminutive statuettes and relief carvings collectively known as "Venus" figures. Enormously obese yet oddly graceful, with exaggeratedly female sexual characteristics —great pendulous breasts, enormous jutting buttocks, heavy thighs, and huge upper legs dwindling down to small, pointed lower legs—they form a distinct and unified assemblage that, as the exhibition's catalog states, suggests a common origin antedating the years 30,000 to 22,000 B.C. when they were sculpted.

There are pictorial, sculptural, physiological, and possibly mythological reasons for the shape of these Venuses; they are fertility symbols, undoubtedly mother goddesses or female ancestors, whose exaggerated physical characteristics represent the mysterious female processes of gestation and birth. Yet there are compelling reasons to believe that this is by no means the complete explanation for why the Venuses look the way they do. Why the insignificant lower legs? Why does the line that sepa-

rates the buttocks continue upward to the top of the small of the back? Why the featureless face, the pitched forward head?

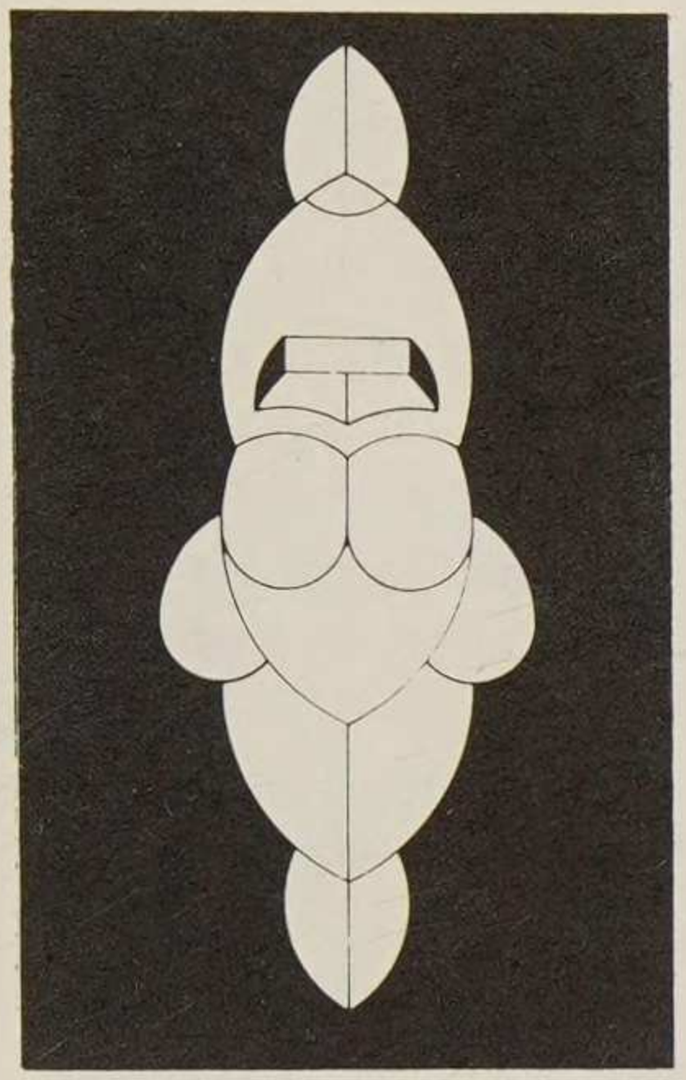
One explanation, though it may disturb those who conceive their Ice Age ancestors to have been avowedly artistic but ignorant of any abstract cognitive skills, is that the Venuses are also symbolic representations of calendrical information—in effect, mathematical formulations in ivory or stone.

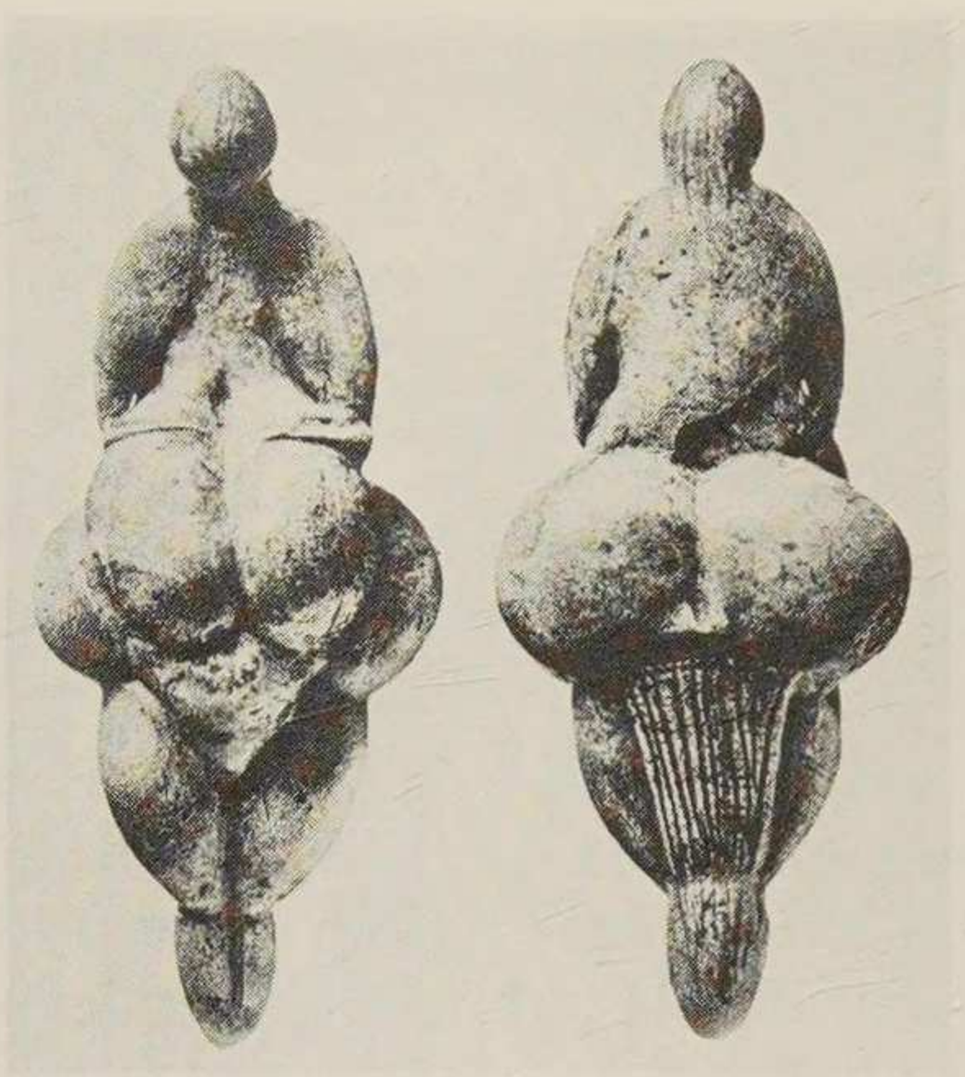
The evidence for this admittedly startling statement is summed up in a series of diagrams which I prepared almost a decade ago and published shortly thereafter. Starting with graphic representations of certain basic calendrical formulae embracing the lunar-menstrual month, and utilizing the simplest and yet strictest geometrical transformations, a pair of two-dimensional figures was generated that turned out to have the almost exact dimensions, front and back, of one of the earliest and most distinctive of the Venus figurines: the Venus of Lespugue, which I had not previously seen nor heard of. That this is no fortuitous construction is indicated by two factors: first, the geometrical transformations referred to are based on the three most fundamental female/calendrical cycles: the 28-night lunar-menstrual month, the 280-night gestation period, and the 364-night lunar-menstrual year; second, the interim designs formed during several critical steps of the procedure survive today in the form of exact analogs in the primitive art of five continents.

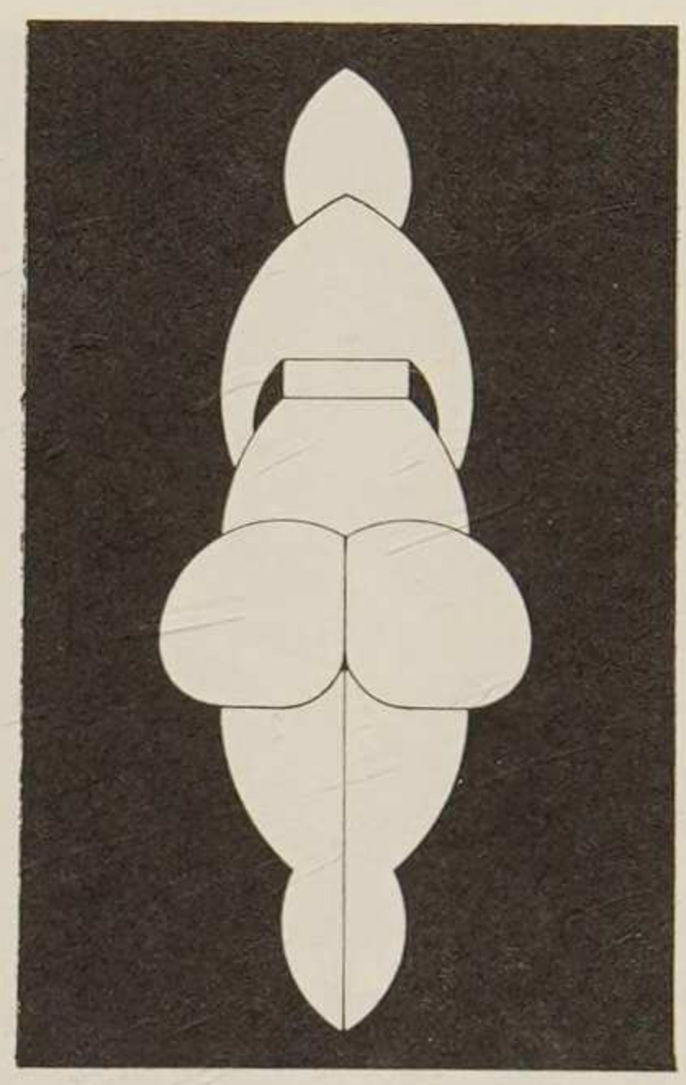
Corroborative evidence is provided by the presence of a band across the top of the breasts in the drawings—a band that is demanded by the method of construction. Such a band does not appear on the Lespugue statuette, although there is a carved-out area under the armpits that would permit one to be affixed; however, the band does appear, clearly sculpted, across the top of the breasts of the Kostenki Venuses from the Ukraine. Photographic renditions appear below of the Lespugue Venus, flanked by the lunar-menstrual female figures which I reconstructed geometrically.

The conclusion seems inescapable that Cro-Magnon artists followed essentially the same steps as I did to produce the Lespugue statuette, and the resulting drawings served as patterns for their three-dimensional Venus. To believe otherwise is to stretch the bounds of coincidence. Yet the implications of the belief are almost equally staggering: that Cro-Magnon artisans were also scientists and mathematicians capable of performing, at the very least, basic arithmetical manipulations; that they were fully cognizant of fundamental biological and astronomical cycles and of their mathematical relationships; and that they had developed a complex and sophisticated graphic and sculptural tradition to symbolize these cycles.

Of the beautiful art and science symbols which Ice Age human beings devised in







honor of Time, of wide-wheeling Heaven, and of ever-turning Earth, tragically little remains today. Can anything whole be made of the scattered fragments? Yes, if the findings of many minds from various parts of the world can be brought together in common cause. It is only by gathering up with an abiding care the scattered fragments of our Ice Age ancestors' extraordinary art and their remarkably architected science symbols—by reconstructing all with a severely dispassionate logic—that we will come to know something of their deeply artistic and scientific minds. To know them better is to better the knowledge of ourselves. To search for their meaning is to search for our own.

Bart Jordan, performer-composer, artist, and cultural decipherer has lectured on Ice Age art and science in colleges and universities, both here and abroad.

Awakening to Our Dreams

by Faye Ginsburg

The Theater of the Open Eye
New York

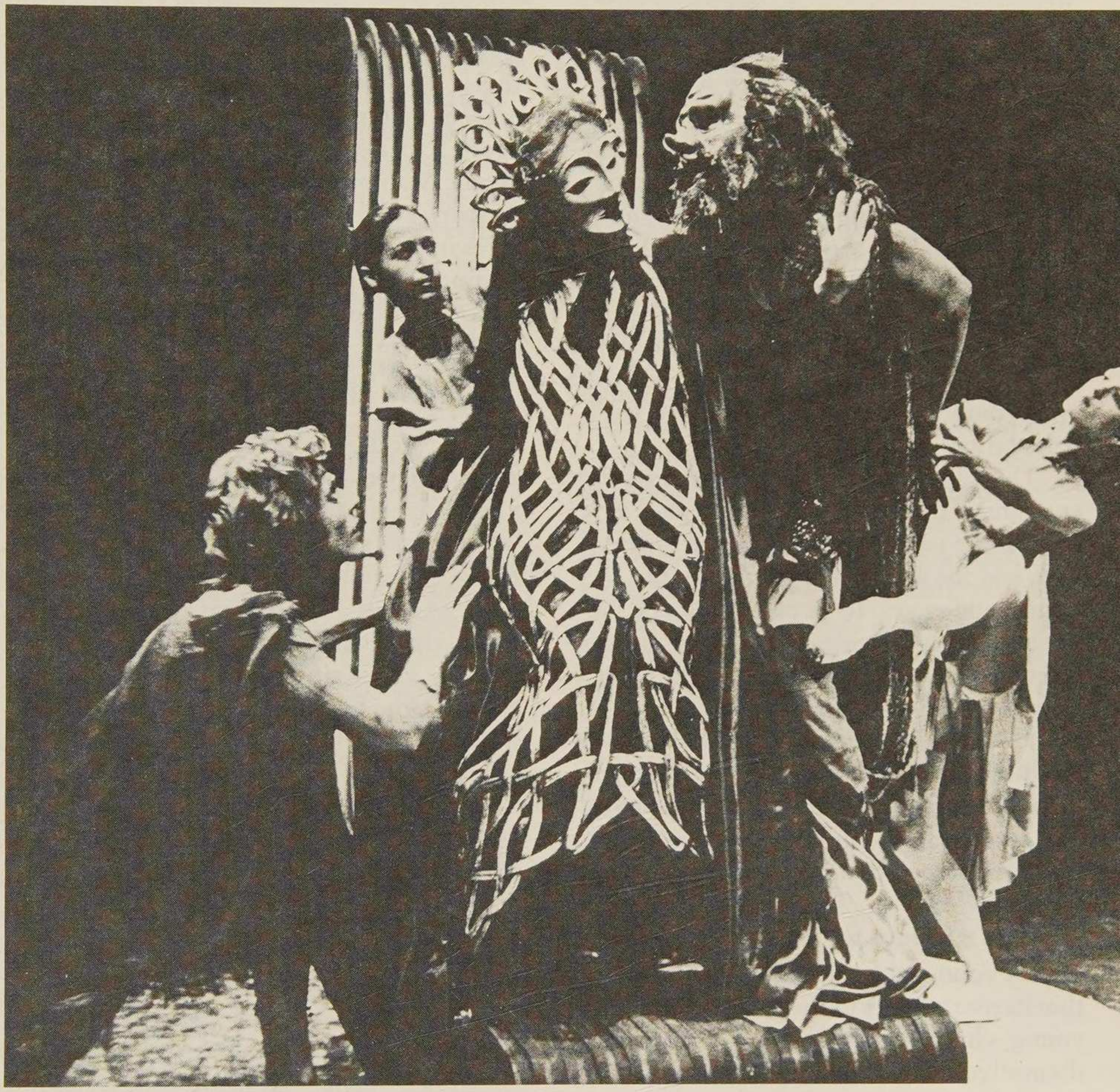
Mythologies are in fact the public dreams that move and shape societies; and conversely, one's own dreams are the little myths of the private gods, antigods and guardian powers that are moving and shaping oneself.

—Joseph Campbell
The Mythic Image

Inspired to give shape to the mythologies that lie dormant within us, choreographer-director Jean Erdman and her husband, scholar and historian of myth Joseph Campbell, founded the Theater of the Open Eye in 1972 in New York City. Working against the assumptions of their colleagues in academia and theater that alienation is irreversible, their goal has been to create a center devoted to (in Ms. Erdman's words) "a total understanding of the inner rhythms within all the arts and within us all." Over the last six years, the Theater has established its own identity, weaving together dance, drama, music, puppetry and the visual arts into dramatic productions. Running a complementary, if more scholarly, course are the one and two-day seminars on myth, psychology, religion, and the arts in the "Realms of the Creative Spirit" program under Mr. Campbell's direction. The symbol of the Open Eye, a reference to the "third eye of inner awareness," is specifically Egyptian, yet the theater has selected from both ancient and modern traditions for study and dramatic adaptation; productions include works derived from Japanese, Hawaiian, South Indian, Haitian, American Indian and Eskimo myths and legends.

It is not an easy task to attempt to reintegrate esthetics and mythos in a society that seeks to enforce their separation. In spite of this, The Open Eye has evolved into a foundation with a permanent residence at The Church of the Holy Trinity on East 88th Street. Talented artists and scholars with a hermeneutic bent continue to be attracted to the dramatic productions and seminars, which have been taken to campuses and theaters across the country and abroad, by invitation and as part of the NEA dance touring program. The audience is beginning to expand beyond a loyal core of professionals and initiates.

Currently, the adult repertory includes not only Ms. Erdman's varied productions ranging from *Moon Mysteries,* based on the plays of W.B. Yeats, to *Gauguin In Tahiti* whose cast required six imported Tahitian dancers; the theater is also a base for new



Scene from "Moon Mysteries."

artists such as choreographer Valerie Hammer whose award-winning *Op Odyssey* incorporates dance and poetry with video and kinetic sculpture.

The seminar program, in its sixth year, has been extended under the direction of M.J. Abadie to bring in scholars such as Huston Smith, anthropologist Joan Halifax and Egyptologist Mark Hasselriis; additional seminars with directors and artists from the theater program are planned in order to strengthen the connection between the two main components of the Open Eye Foundation.

The Children's Theater, now in its third year under the direction of puppeteer Eric Bass, is the newest element of the Open Eye, and the one which has drawn the largest audiences. Its popularity is not simply because it provides some of the most interesting theater designed for children in New York City. Company members have found youngsters to be immediately responsive to their kinesthetic style; children return frequently with drawings, their own characterizations, and with parents who have discovered that good children's theater is good theater. The company feels that the ideal audience for their work is a mixture of young and old, adults lending authoritative weight to the imagination of the young, children helping adults to release themselves from their expectations of traditional theater.

Like all of the Open Eye artists, Eric Bass has learned to play with those expectations. "I want to surprise the audience, to present material that is not the usual imagery Americans receive—like Fonz, the Bionic Man or even Cinderella. We develop stories and characters from other cultures in part to overcome the intellectual assumptions our audiences bring to the theater. Ultimately, we reach people through a *rhythmic* sense, so that actor and spectator release into the shared moment of performance."

The strengths and weaknesses of that approach became clearer to me in watching a recent performance of Ms. Erdman's latest piece (still in progress) *The Shining House,* inspired by the vivid and visionary work of artist Paul Jenkins. Projections of his abstract paintings on the stage set provide the visual rhythm for the piece which explores the female archetype of the passionate, powerful creator/destroyer, in this case the Hawaiian volcano goddess Pélé.

The dramatic construction has a group of American beach bums (including a "visionary anthropologist") partake of a local

brew on the Hawaiian shore. They are suddenly catapulted into the realm of Pélé; the emotional constellations in the mythic plot mirror the relations between the original American characters. When the piece achieves its full mythic proportions expressed in costume, dance, song, stage design, and Hawaiian chanting, it successfully draws the audience into its dramatic reality. The choreography is excellent, combining the best elements of stylized Eastern form with expressive modern composition. Humorous gestures such as the orgasmic chanting of the troupe of nymphs during a chaste love scene and the Mae West swagger and speech of the passionate Pélé are witty and well-placed.

In short, the piece is carried through the drama of its visual, musical and choreographed rhythms. The transformation of the Americans into mythic characters, however, is not convincing. By simply using them as a dramatic device, Ms. Erdman breaks faith with her own philosophy that myth and its dramatic expression are a natural passion of the human mind, even if the location of that mind be in Manhattan, 1978. To skip over our own lives for the gods of a people more remote is, in a sense, to ratify the mythic through the exotic. We need not turn away from our own culture; New York may be history's most secular city, yet one need only scratch the surface to reveal the hunger that indeed exists to see the theatrical presentation of myth in our daily lives. That audiences seek to satisfy that appetite is evidenced by the popularity of productions such as *Dracula* and *The Exorcist* which turn on the allegorical battle between good and evil. A theater like The Open Eye has the potential to develop more deeply such basic themes as they are manifested in contemporary life—not only as they have been expressed in exotic or ancient traditions.

The Open Eye has succeeded in developing forms, in its "total theater" and in the intimacy of its seminars, that can integrate work in all the expressive fields, bringing back the essential elements that are at the root of human drama and myth-making. As they continue to expand, one hopes they turn more frequently to the conditions of our own lives in the late twentieth century, and help us reestablish contact with the myths we all carry with us.

Faye Ginsburg is a graduate student in anthropology and is the recipient of an NEH grant for a videotape study on "Women and Ritual."

The Unseen Universe: Photographs from the Scanning Electron Microscope
By C. P. Gilmore. New York: Schocken Books, 1974. Pp. 159. Paper $8.95.
Sensitive Chaos: The Creation of Flowing Forms in Water and Air
By Theodor Schwenk. New York: Schocken Books, 2nd printing, 1978. Pp. 144 + pp. 88 of illustrations. Paper $8.95.
Cymatics, Vol. I: The Structure and Dynamics of Waves and Vibrations Vol. II: Wave Phenomena, Vibrational Effects, Harmonic Oscillations with their Structure, Kinetics and Dynamics
By Hans Jenny. Basel, Switzerland: Basilius Presse, distributed in the United States by Schocken Books, 1975. Pp. 183 (Vol.I), pp. 185 (Vol. II). $39.50 each.

Reviewed by David Finkelstein

If there is any testimony that deceives better than statistics it must be photographs, and here are four photographic fables to prove it, picture books of created worlds, more compelling than science fiction and fantasy because these worlds are created in the laboratory, or rather in a global plurality of laboratories, by skilled and sensitive men completely convinced by their own fabrications, living in the worlds they create, each master of his minor art.

Each of the four is based on a series of special laboratory effects and photographic techniques, each with its own special and powerful spirit, and each takes one of two polar approaches to natural processes, one analytic and the other synthetic, one reductionist and the other holistic; A.N. Whitehead called one simple-minded and the other muddle-headed, in a joke to Bertrand Russell. I begin with the most simple-minded.

The Unseen Universe is almost all pictures, borrowed from laboratories throughout the world equipped with a rather newly distributed instrument, the scanning electron microscope. These pictures have a visual impact and beauty associated more with photographs of sculptures or wildlife than of microscopic slides. This is because the scanning electron microscope looks *at* its subjects whole where previous microscopes have looked *through* their subjects sliced thin, revealing little overall form. We are provided by C. P. Gilmore, executive editor of *Popular Science,* with a handbook of the flora and fauna of a universe that is hidden because it is 50,000 times smaller than ours, a handbook with enough pictures to compel us to imagine what daily life in that universe would be, and to change forever our perception of our own universe. The shark becomes a frisky playmate next to the grim remorseless housemite times 50,000, a flying saucer with jaws. The sculptor of the diatom is more expressive in her use of space and opening than poor mortal Moore.

The rush of all this information is heady. Do natural processes carry their determining causes within their microscopic structure? Does One-Eyed Odin the All-Seeing look at us through a pawnbroker's loupe? If we could see just another 100,000 times smaller, could we read the Book of Knowledge? A bottomless pit opens at our toes, and staring down we catch a glimpse of Hell. A subtle deceit is unwittingly practiced on us if we imagine

further magnification will bring all that is hidden into view. Another 1000 times magnification and we would be looking at individual atoms and these will not sit for their portrait, but are in such a restless state of motion that their structure is disrupted if they are stopped. We can sense "the impact of the unseen on the seen" in these still-lifes, we see what Gilmore calls "a serene beauty in the order of nature that cannot be accounted for by chance," but we are not closer at the end to understanding the origin of this order, and we look elsewhere.

In *Sensitive Chaos* we meet not the work of others, but the artist himself. I infer that the author, Theodor Schwenk, is not a scientist in the ordinary sense of the word. His work is anthroposophical, with prominent references to Rudolf Steiner and Goethe, and he seeks the determining causes of natural processes not within them but in their governing spirits or daemons, not (using the terms of my own mythology) in Hell but in Heaven. (I do not use these words pejoratively, and I place my own physics pretty far down the pit, bottomless or not.) In each chapter he explores with love and sympathy one hydrodynamic process where inhomogeneity is created from homogeneous flow, all known to physicists of previous centuries. His descriptions of flowing water are poetic and evocative, and give us new sympathy for the forms of nature. There are glorious shots of the meanders of rivers, the rhythms of clouds, the wind rippling over the sea, the breaking of waves on the shore.

It is at the exits of the chapters that the traps wait as a matter of basic principle; there is throughout no mention of the detailed microscopic nature of the occurrences, as revealed in the studies of Rayleigh, Helmholtz, von Karmán and their peers. Nor are there measurements, again as a matter of principle, for they would disrupt the wholeness of the process, though the author does recreate many of the flows in his laboratory for better photography, and even slows them with glycerine and powders them for the same purpose. Rather, each hydrodynamic effect is taken to manifest another character facet of the spirit of water. Indeed (and here there is an ambition similar to that of catastrophe theory) he uses the similarities of these hydrodynamic forms to organic forms to build a vocabulary for descriptive anatomy and to explain the forms of living creatures as further expressions of the spirit: What makes a bubble can make an egg. The avoidance of standard scientific explanation goes as far as confounding surface tension in trees with water pressure in fountains, presenting both as expressions of one desire to rise resulting from positive spiritual radiation from above, striving with the negative emanations from below. These archaic Zoroastrianisms are hand-me-down substitutes for an actual spiritual voyage that is far more complex in its intertwining of tragedy and comedy, heroic and banal, and nowhere mentioned in this book—the human spirit of the scientific adventure. The horrifying ignorance of nature and prevalence of technology that passes for culture today is best dramatized not by the author but by his honored reviewers, who do not even recognize the antiscientific bias of the book they glowingly praise as a model of scientific exposition.

Yet the desires expressed by Schwenk are themselves a valid spiritual force that must be reckoned with, even though they lead beyond science today. Comparison with *On Growth and Form* by d'Arcy W. Thompson is irresistible and informative, for Schwenk shares Thompson's reverence for organic form and desire to comprehend, and he looks at many of the same shapes.

Thompson understands the spiral form of the snail as an inevitable consequence of elementary acts of growth, repeated without change except in scale. He explains form as the result of growth, finds the causes of the spiral within the snail itself.

Schwenk on the other hand understands the spiral form of the snail as a mineral reproduction of a whirlpool, both snail and whirlpool being expressions of the life spirit's flair for vortices. He explains growth as the means to form and thus finds the causes of the spiral outside the snail itself. In this juxtaposition, Thompson represents the reductionist aspect of science, and Schwenk the holistic aspect of religious thought.

In the seventeenth century, before physics was called physics, it was called Natural Philosophy, and before that, Natural Magick. In the days of Natural Magick, as even more in alchemy according to Jung, those similarities between physical processes in the crucible and spiritual processes in the psyche that we use only as metaphors today were seen instead as identities or at least homologies, results of the same forces at work on slightly different substances. Stones were sermons and running brooks were books. Schwenk writes in the spirit of Natural Magick and alchemy. Is there any truth in what he says? Let us return to this question after looking at a closely related third work.

Cymatics by Hans Jenny also pays homage to Steiner, and is *Sensitive Chaos* inverted, in that where Schwenk looks at the vibrations and other patterns produced by flows, Jenny looks at the flows and other patterns produced by vibrations. Here again old reliable physical demonstrations are taken from the lecture-hall storeroom, dusted off, stripped of their technical explanations and descriptions, and used to bolster a philosophy of nature opposite to that of their originators. Much of this book consists of photographs of figures made by sprinkling a fine powder on a vibrating surface and letting the powder drift to the still points: "Chladni patterns." The author also does many variations, vibrating not only the standard lycopodium powder, which is the ever-so-fine spore of the lycopodium fungus, but sand, water and putty too, with pretty photographs to prove it. You can do the experiments of Schwenk barehanded at the beach, but to replicate those of Jenny you will need a source of vibration. Chladni used a bow, as if playing the musical saw, but the author uses an audio oscillator, whose frequency and amplitude can better be controlled. Unlike Schwenk, Jenny studies effects whose theory is not worked out yet, such as the actual flow of his powder, and may well be breaking new scientific ground by focusing attention on these effects. We know how to calculate the final Chladni patterns, but not the drift that makes them, nor the slow dance of a drop of liquid or paste on a vibrating plate. Cymatics is a branch of rhe-

ology (the study of flow) that has not been studied much to my knowledge. Cymatics may have practical importance in the mass production of bread, paint, or abstract sculpture, as a way of mixing and forming plastic substances without containers.

Both Schwenk and Jenny write in German, Schwenk in a limpid style that enhances his subject, Jenny, at many places, in an inappropriate imitation of bad technical reports. The difference is enhanced by the translations, smooth for Schwenk, stilted and literal for Jenny's book, which is captioned in parallel columns of German and English.

Can the ideas expressed by Schwenk and Jenny be ahead of present-day science as well as behind it? The path of science meanders like a road climbing a mountain. Let us follow the reductionist approach to an understanding of the nautilus chamber until it loops back on itself.

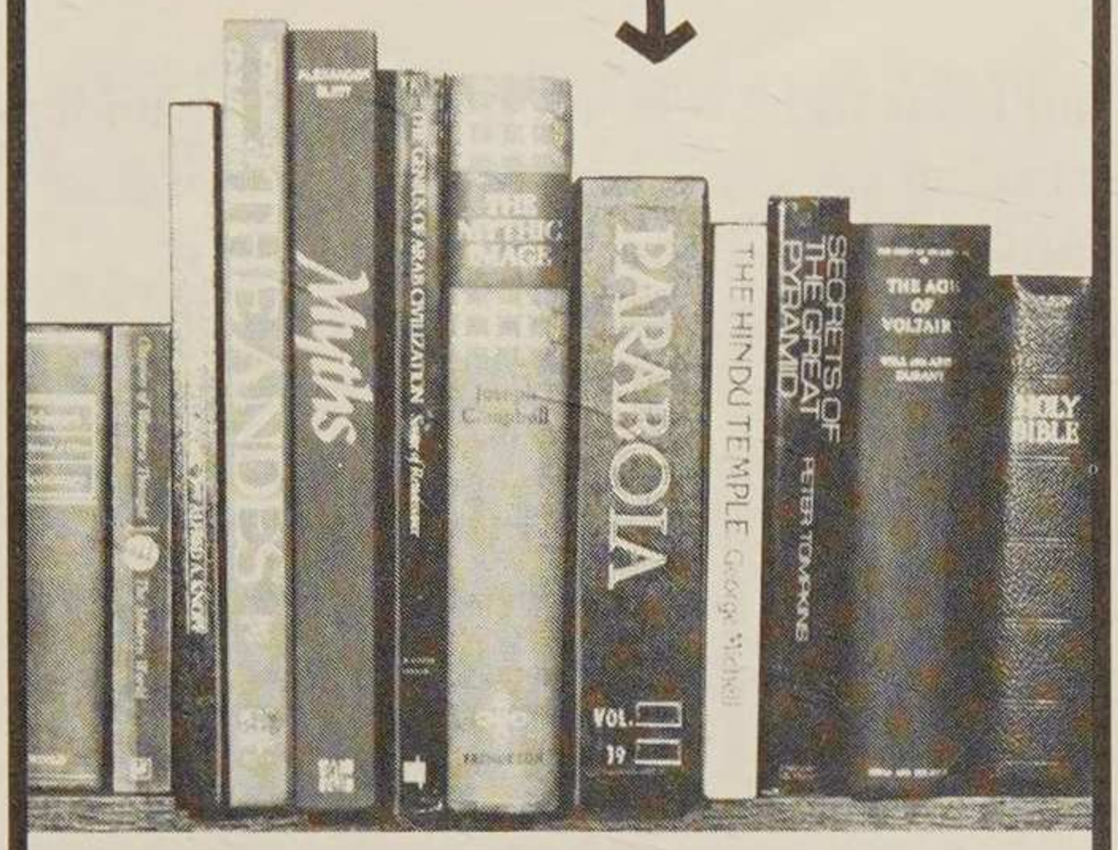
If we carry out finer and finer analyses of the growth process of the snail, we come soon to a network of enzyme reactions controlled by genetic material whose origin we indeed found beyond the snail itself, but in the species and its environment and in the evolutionary process, not in a holistic life spirit. The triumph of Darwinian analysis is to reduce the apparent teleology of the biological universe to microscopic mechanical processes. What can holistic feelings and ideas like Steiner's contribute to understanding compared to the growing precise knowledge and control of the genetic mechanism that reductionist ideas yield today? Can there be a true homology between a whirlpool and a snail when genetic evolution is nothing for one and everything for the other? Is the psyche truly the opposite, most complex, end of a linear hierarchy of complexities that starts from the simplicities of some yet unknown elementary physical particles, or does this hierarchy close on itself somehow, so that everything can be built from psychic entities as well as physical? These are some of the thoughts and questions that come up as I read the books of Schwenk and Jenny as sympathetically as I can.

Schwenk and Jenny may seem like nature fakers to people with a modicum of science education. Let me state the charge before refuting it.

Indeed, imagine we are on an interstellar pleasure cruise. We have just swooped down on Mars to walk in the desert in our protective suits. One of the passengers cries out, "Look! I've found life on Mars." We see a small duck-like creature at his feet, which quacks and struts about him, beating a tin drum, furiously at first and then slowing to a whirring drawl as its conspicuous spring motor winds down. It is a stamped metal toy, and another passenger responds, "Faker! It's not alive. Anyone can see the works."

And, water is not alive, anyone can see the works, though indirectly. The properties of water explored by Schwenk and Jenny are among those covered by a standard summation named after the physicists Navier and Stokes. Here is how Navier-Stokes says water works: Every drop consists of a large number of small parts (molecules). These move mechanically (according to Newton's mechanics) with a common mean motion that we see directly and an

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Photographs by Peter Kaufmann, Deu-Fra

individual internal motion we see only indirectly as heat energy, and they collide with each other. The forces on each drop consist of pressure and friction, whose more exact specification I omit, where its surface contacts other drops.

To be sure there are lovely properties of water Navier-Stokes does not describe: its wetness, smell, taste, transparency, and essential role in our organic lives. But Schwenk and Jenny deal just with the simple mechanical properties of water described by Navier-Stokes.

In the case of the toy duck, the charge of fakery could only come from an ossified sense of humor because the works are so ludicrously obvious. The works of water are sufficiently hidden from the eye to leave Schwenk and Jenny open to suspicion either of inexcusable ignorance or willful mystification.

In fact they refrain from microscopic analysis on principle. I also would defend them, to an extent, on grounds of truth. For this, I return to my parable. The tin duck *is* a sign of life on Mars, not its own, but that of its maker, firstly, and its audience, more deviously; evidence of life like Friday's footprints only better.

Water, with its propensity to ripple, bubble, and whirl and splash, lovingly described in these anthroposophically oriented books, likewise is a sign of life in a way that



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a working physicist cannot always keep in the fore of his mind. Can the suitability of water to our life be entirely due to chance?

There is a line of shepherds, psalmists, cosmologists and physicists, including Leibniz, Kant and Einstein, who have expressed suitable awe of what I will call the great given: that amidst the hostile forces of nature, between burning Sun and freezing space, there is this small brief place where we contemplate the amazing fact that amidst the hostile forces of nature, between burning Sun and freezing space, there is this small brief place where we contemplate... The more we learn of the law of nature, the more remarkable and improbable the curious inevitability of life and mind becomes.

The most beautiful of the rare attempts of modern physicists to cope with the element of design in natural law is Brandon Carter's "biogonic theory" of the origin of natural law. The fertility of our Universe, after all, depends sensitively upon a rather small set of favorable parameters: the three dimensions of space, the masses of the elementary particles, their modes of strengths of interactions, the amount of matter, and even the epoch at which we find ourselves in the history of the Universe, late enough for stellar fires to have cooked some hydrogen into vital elements like carbon and potassium, but too early for these nuclear fires to have burnt out. Many of these parameters are usually assumed to be constants of Nature, fixed forever. Carter suggests that, like the epoch, all these parameters are variable, and we are blessed by circumstances so suitable for life because with any other parameters no one would be alive to see them. This biogony, not yet a full-fledged physical theory, is in the same broad metaphysical family as Leibniz's belief in the best of all possible worlds, and Kant's belief that all the laws of nature can be deduced from the one fact of the possibility of knowledge itself.

A rudimentary knowledge of physics is a great obstacle to a sympathetic entry into these attempts of Schwenk and Jenny to create an alternate science, but feeling for the great questions of physics helps. Their conviction that life can explain, as well as be explained by, natural law is not as crazy as it sounds. While I see no chance of deep understanding without the penetrating analytic methods adopted by scientists today, the venerable spirit of these more humanistic approaches to an understanding of nature also seems correct to me. The law of nature may be more qualitative (rather than quantitative), and the whole may somehow enter more into each part, than our present theories admit. I feel deeply the lack of a synthesis of the analytic attitude of the first of these books with the holistic of the last ones.

David Finkelstein is a physicist at Yeshiva University in New York. His main work has been to apply the holistic methods of topology to such analytic theories as quantum theory and general relativity. He is also University Dean of Natural Science and Mathematics.

The Magic Orange Tree and Other Haitian Folktales
Collected by Diane Wolkstein. Drawings by Elsa Henriquez. New York: Alfred A. Knopf, 1978. Pp. 212. $6.95.

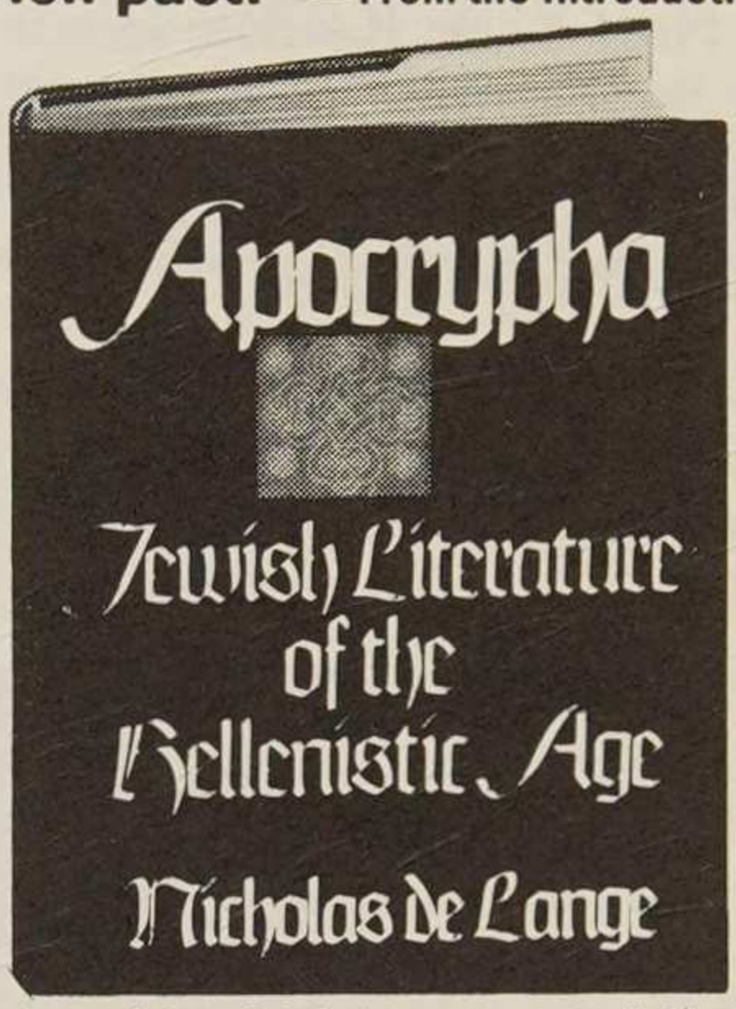
Reviewed by Katharine M. Briggs

The Magic Orange Tree is an unusual and arresting book. It reminds me in some ways of Marie Campbell's *Tales of Cloud-Walking*

Country, which I have long felt to be one of the best books of tales put together by a single collector. Diane Wolkstein, like Marie Campbell, introduces her tales by a description of the setting and character of the narrator, so that the whole book is an anthropological study of the society in which they are told. There is one difference between them: Marie Campbell was almost always the solitary and entranced listener to a narrator who was drawing on stored memories of tales that were no longer valued as they had been. Diane Wolkstein records the tales with an audience. She plunges in midstream. Most collectors begin their work when the narrators remember wistfully the *ceillidhs* of old days, and the high repute in which old storytellers were held; in these Haitian gatherings there were eager tellers and eager, if critical, listeners. The storytellers' "Cric?" was not always met by an affirmative "Crac" which showed that the story would be acceptable. When Marie first learned the stories she was already a loved and respected member of the community; Diane Wolkstein had to win her way through to acceptance, and sometimes the passage was stormy.

The young people for whom this book is partly intended should be both intelligent and mature if they are to get the best out of it. If they approach it rightly they will be well-equipped folklorists later on. Older people will enjoy the book too; folklorists, anthropologists, and storytellers will learn much from it.

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Diane Wolkstein has ignored the formal machinery of narrative research; we hear nothing of type and motifs, though she sometimes remarks that some of the tales have counterparts elsewhere. But these references will scarcely be missed, for the prefatory notes are so clear-cut and so filled with flashes of light thrown on the customs, beliefs, and practices of the Haitian people that nothing else seems to be wanted.

The illustrations by Elsa Henriquez make an appropriate and imaginative comment on the tales.

Katharine Briggs is the president of the English Folklore Society and the author of An Encyclopedia of Fairies *and* British Folktales, *both published by Pantheon Books.*

Zen and Zen Classics: Selections from R.H. Blyth
Compiled and with drawings by Frederick Franck. New York: Random House, Vintage Books, 1978. Pp. xviii + 289. Paper $4.95.

Reviewed by Nancy Pearson

"The point is to grasp each moment before emotion or intellection has a chance to survey it *independently*. Every act...is to be as full of feeling and thought as possible... A man and his act are to be one."

These words of R.H. Blyth's, quoted by Frederick Franck, are the last in the book. At the risk of sounding facetiously "Zennish," it has to be added that this is not a book—at least not merely a book. In fact it is rather the question itself: what is Zen? which can be seen and heard as the origin and, so to say, organizer of this joint work. Here is an "active" way of writing that brings the reader to an experience of participation (or "self-confrontation"). The moving pattern of these extracts from Blyth's commentaries on Zen Buddhism continually raises questions, and just as a glimmer of an answer appears, it fades into the frame of the next question in a non-linear continuity.

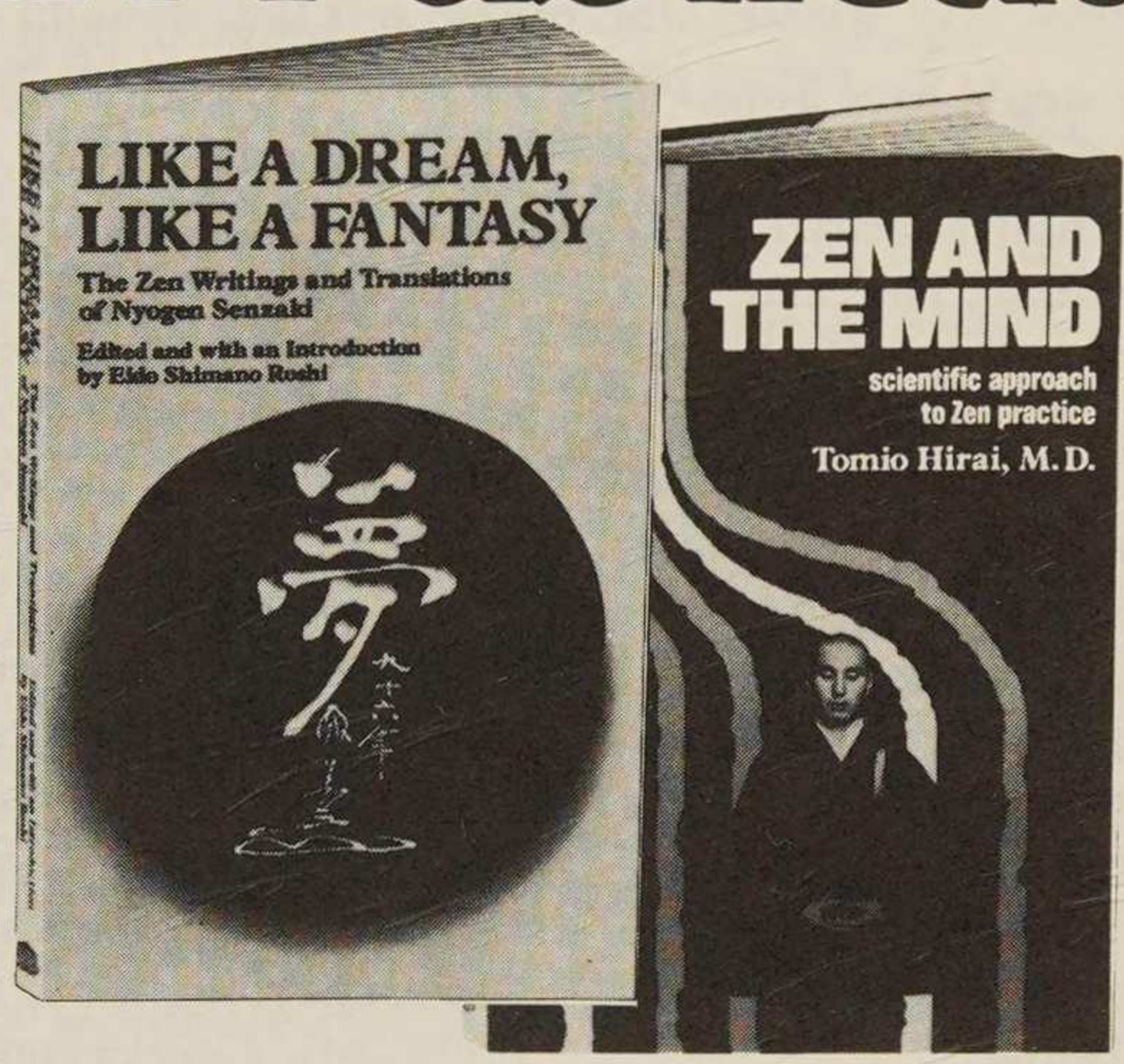
In introducing to us R.H. Blyth (1898-1964), an Englishman who spent almost the whole of his unobtrusive life in the Orient, much of it teaching English to Indian, Korean, and Japanese students, Frederick Franck says that his work may be "the catalyst needed for a reintegration of Eastern and Western spirituality." This (curiously Western-sounding) prediction seems to become more concretely based when the reader is made aware of Franck's first encounter with Blyth's work. Blyth's first book (*Zen in English Literature and Oriental Classics)* was written while he was interned in Korea as an alien during the war and published, like all his mass of unedited production, with very limited distribution by Hokuseido, Tokyo; Franck came upon it by chance, instantly recognized a deep affinity, and says: "I owe him unbounded gratitude, this most lovable person I failed to meet in the flesh."

The prediction acquires further substance when a third figure comes into the vision of Zen-to-Zen reintegration—in the shape of D.T. Suzuki, known "in the flesh" to both of the others, greatly revered by Franck, and a close friend of Blyth of whom Suzuki said: "To all of us who knew him, he was first and foremost a poet with a wonderfully keen and sensitive perception." While Blyth said of Suzuki that "he is the only man who can write about Zen without making me loathe it." Elsewhere, Blyth again: "Nothing is sacred except one's own foolish and contradictory intuitions...by intuition is meant here that which I myself have in common with all so-called 'great men'...purely subjective, dangerous...but the great thing is to have courage."

This perhaps makes it easier to follow Frederick Franck's thought when he mentions the "importance of Suzuki's feat in bringing Zen Buddhism to the West" as having been an event to be "compared to the discovery of nuclear energy." We real-

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ize that Franck also is a man who writes (and draws) to himself, for himself, and courageously acts, when he can, energetically.

It is only possible, by way of review, to indicate non-objectively, and without further, however tantalizing, quotations, that this book is eminently recommendable to all those who are sensitive to whatever "Zen" may be as an unknown factor in human life. Its content is surely compatible with their own search insofar as they are permanently dissatisfied with their response to the challenge taken up time and again in the past by all "Real Men"—such as the one described in Ikkyu's poem of six hundred years ago, which Franck tells us "refers to R.H. Blyth":

The figure of the Real Man
standing there...
just a glimpse of him
and we are in love.

Nancy Pearson is a student and translator of traditional literature. She has translated works by Leo Schaya, Henri Corbin, René Daumal, Lizelle Reymond, and others.

The Road to Eleusis: Unveiling the Secret of the Mysteries
By R. Gordon Wasson, Albert Hofmann, and Carl A. P. Ruck. New York: Harcourt Brace Jovanovich, 1978. Pp. 124 + 14 illustrations, 8 in color. $12.95, paper $4.95.

Reviewed by Richard de Mille

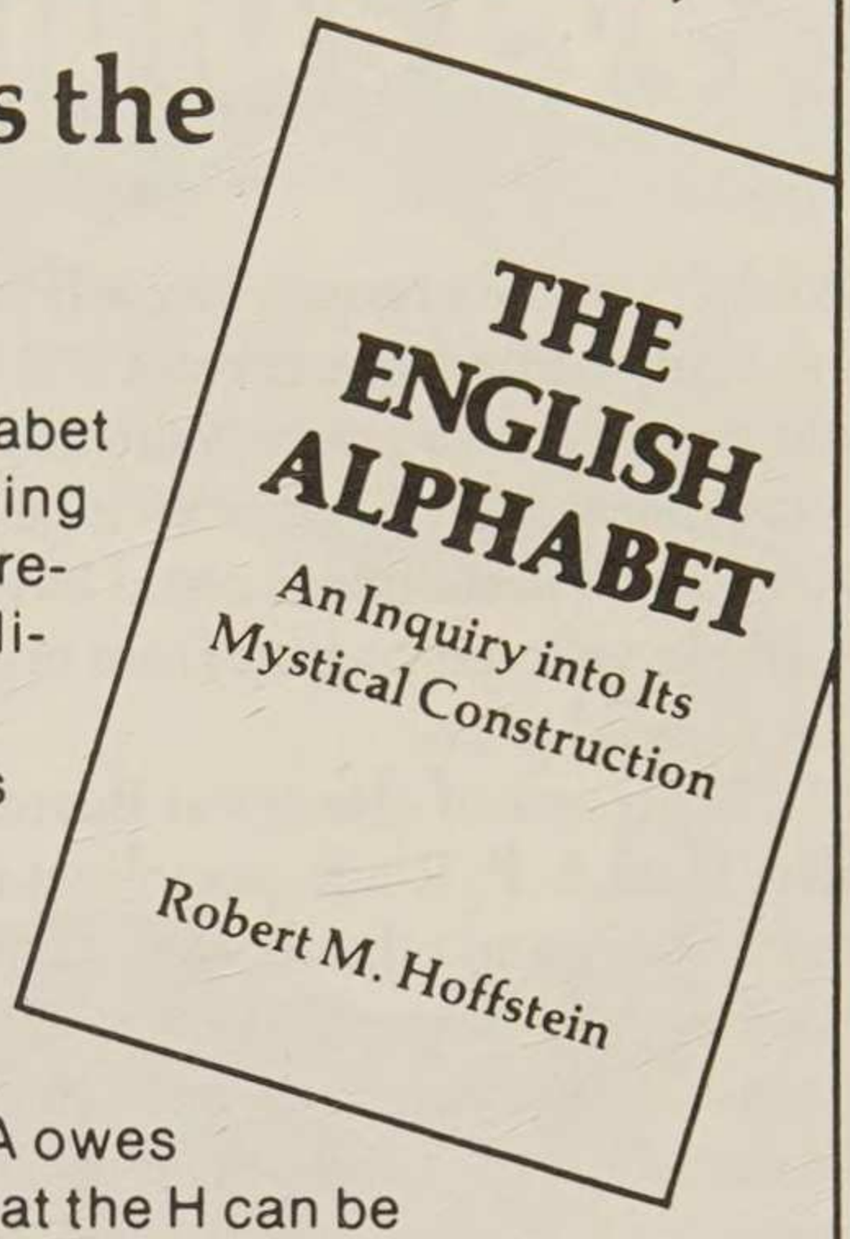
How this slim volume would have astonished my old Greek-master, forty years ago a young man psychopomping barbaric schoolboys through *Anabasis, Iliad,* and *Alcestis.* Too bad, he told us, but the secret of Eleusis lies locked in the venerable past unlikely ever to be unearthed. Rites of purification surely they had, and a great procession to Demeter's temple, fasting and feasting no doubt, but the central mystery, rigidly protected by laws of silence, is now quite lost in the depths of time. Regrettably we shall never know what sacred drama so transformed its viewers, never learn what holy sights assured those initiates a happy afterlife in the world below.

Perhaps, gropes my coffee-table art book, the symbols displayed at Eleusis were "Mycenaean relics handed down since the beginning of Demeter's cult. Such objects would be foreign and 'awe inspiring' to the Greeks of later eras." How pitiful the answers offered by ignorance.

The Wasson road to Eleusis began fifty years ago at Big Indian in the Catskills, where in 1927 Valentina Pavlovna Wasson horrified her bridegroom with a frank display of Russian mycophilia, her joyful gathering of what he called "putrid toadstools" inciting a thirty-year collaborative study of contrasting cultural attitudes towards the lowly mushroom (a term used here for "all the higher fungi"). First recorded Caucasian to eat the Mexican mushroom of vision, identifier of the Vedic Soma as fly-agaric, himself now venerable, Robert Gordon Wasson first began to tell this story in 1956, when he hinted that the Eleusinian Mysteries might have something in common with the Mexican mushroom cult and boldly speculated that hallucinogenic fungi could have given birth to prehistoric religion, their visionary power "a mighty detonator for early man's soul and mind and imagination." At each new telling the story has grown, as much in mythic luster as in factual detail or theoretical completeness, for Wasson is not only a respected ethnobotanist (albeit self-made, an "amateur" in the original sense) but also a distinguished stylist, a master storyteller, and an explorer of the exotic past returning with unexpected treasure.

For this latest venture he sought out some worthy companions, on whom the chief burden of proof would fall. To Albert Hofmann, celebrated synthesizer of LSD and psilocybin, he put the question whether prehistoric Greeks could have found a way to extract a similar hallucinogen from ergot, a fungal parasite on rye, barley, wheat, and certain wild grasses. Adjacent to Eleusis on the Rarian plain, wheat and barley were cultivated four thousand years ago. Though ergot-contaminated rye bread brought medieval convulsions or mummified feet, ergot of rye also furnishes ergotamine, beloved of migraine victims. From ergot of barley, Hofmann determined, one might

THE ENGLISH ALPHABET is a code, that when unraveled, tells the majestic story of man.



In large measure we have forgotten that our alphabet was invented by holy men as a means of instructing us in the sacred Word of God. It is possible to rediscover some of these "secrets" in our most ordinary words if only we learn how to read them.

It is not by chance that the two middle letters of the alphabet (M and N) when animated by the A spell MAN. *Thus man is concealed in the very midst of the WORD* (*alphabet*) and is responsi*ble for balancing it.*

Neither is it a coincidence that the form of the A owes its origin to the hieroglyph of a yoked ox ∀ , or that the H can be traced back to a simple representation of a fence ⫲ and the M to water ⩚.

You may have wondered why the eighth letter (H) and the eighth number (8) sound very much alike (eight-ch). It is related to the concept of self-consuming or "eight-ching". (Eight — and also H — are traditional symbols of the self that has to be consumed — eaten or "ate".

Why is the S used to signify the plural and the D to signify the past? Why does "god" backward read "dog"? and "live" — "evil"? A clue can be found in the meaning of the letters.

Hundreds of words are analyzed in the light of these esoteric concepts. The word "true", for instance, means in this connection, "based on three" or nothing can be true which is "less than three". "Truth" then, is the realization of the three (TR) in relation to the individuating principle (TH) — the Theo or Unity. Herein is the "truth" of the Trinity or Tri-unity.

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> —Bill Quinn, *The American Theosophist*

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safely dissolve ergonovine, a type of lysergic acid, while from certain wild grasses one might get the same hallucinogen without using water. Early man in ancient Greece, he concluded, could have derived a suitable visionary agent from ergot of barley or wild grass.

Professor of classics at Boston University, Carl A. P. Ruck specializes in Greek mythology and ethnobotany. The Eleusinian vision, he says, could not have been a drama, since the temple was completely unsuited for that and no payments were recorded for equipment or actors. The holy thing initiates saw was not a collection of relics, for when Alcibiades profanely showed it to friends at home no one accused the priests of lending him holy objects. What was seen in the temple was Demeter's daughter, the goddess Persephone, returning from captivity in the realm of Hades, assuring each beholder that grain would grow anew, that death was the cradle of life, that agriculture could tame wild growth as religion would reconcile the underworld of passions with the upper world of reason. Months of instructive ritual preceded the revelation, which the authors believe thousands of initiates reliably obtained from a potion of barley.

A fourth contributor, Danny Staples, offers a delightful translation of the Homeric Hymn to Demeter, "the holy goddess whose hair grew in rich plaits as only a goddess's does." Longing for a glimpse of her captive daughter, Demeter was offered wine but "asked instead for barley and water."

I judge this book indispensable to PARABOLA readers, for it bursts with myth and literature like a flower unfolding.

Richard de Mille is the author of Castaneda's Journey *and editor of a work in progress,* The Don Juan Papers: Further Castaneda Controversies.

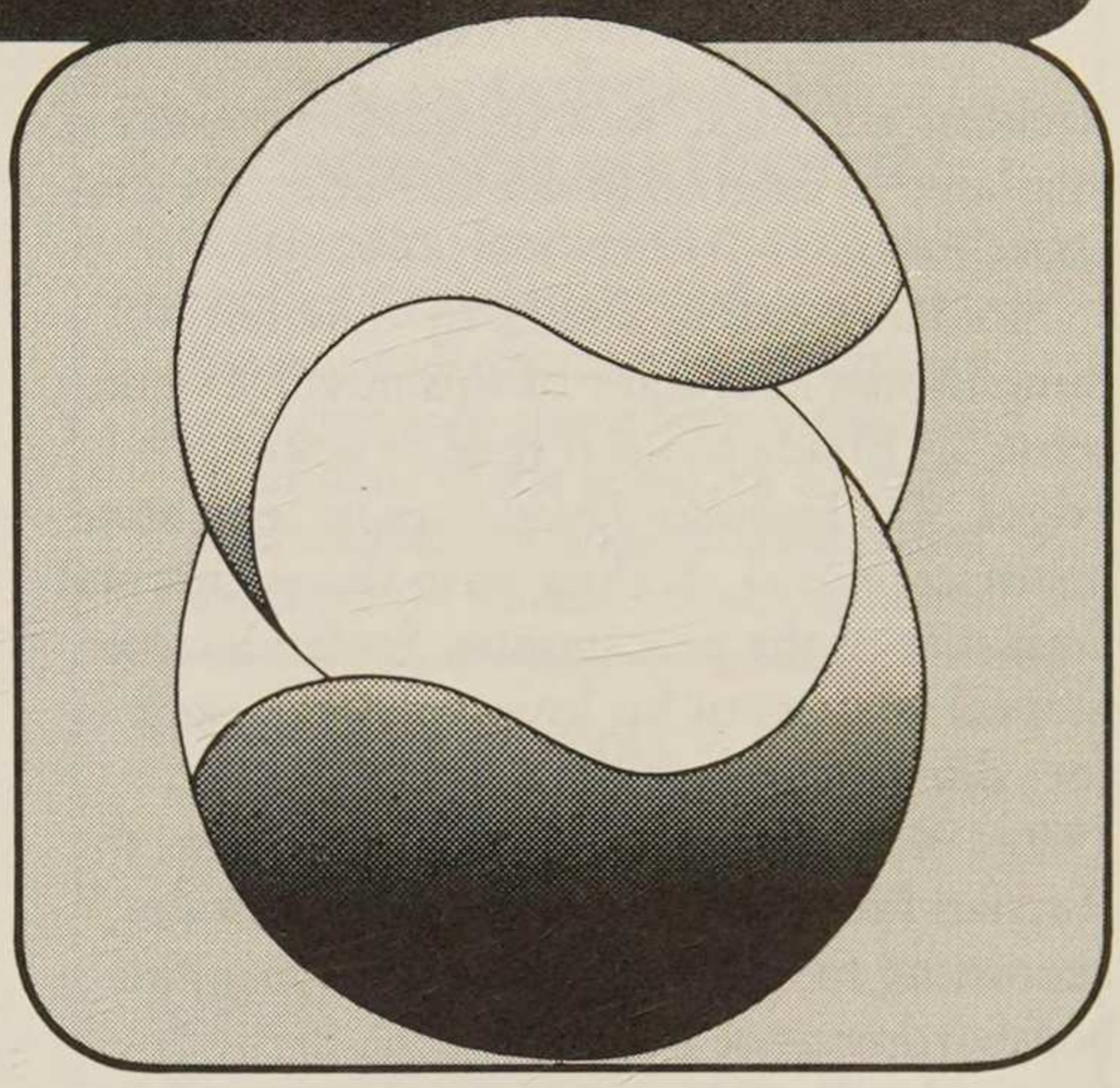
The Forbidden Forest
By Mircea Eliade. Translated by Mac Linscott Ricketts and Mary Park Stevenson. Notre Dame and London: University of Notre Dame Press, 1978. Pp. 596. $18.95.

Reviewed by Joseph M. Kitagawa

Mircea Eliade is well-known in the English speaking world as a leading historian of religions through his numerous publications, from *Metallurgy, Magic and Alchemy* in 1938 to *Occultism, Witchcraft, and Cultural Fashions* in 1976. He continues his distinguished career today as Professor of History of Religions at the University of Chicago. In his native land of Romania, however, Eliade has been recognized as a foremost novelist as much as a scholar.

According to his compatriot, George Uscatescu, a literary critic, Eliade's first two long novels, *Isabel si Apele Diavolului* ("Isabel and the Devil's Waters," 1930) and *Maitreyi* (1933), draw their inspiration from Indian themes of a strong erotic character. "In his lucid, penetrating, and intelligent spirit," says Uscatescu, "*myth* and *destiny* occupy an important place." (My italics.) Myth and destiny in Eliade's works are integrated by means of a *coincidentia oppositorum,* which culminates in his great novel *Forêt interdite* (1955) and the volume of short stories, *Nuvele* (1963). Now thanks to Dr.

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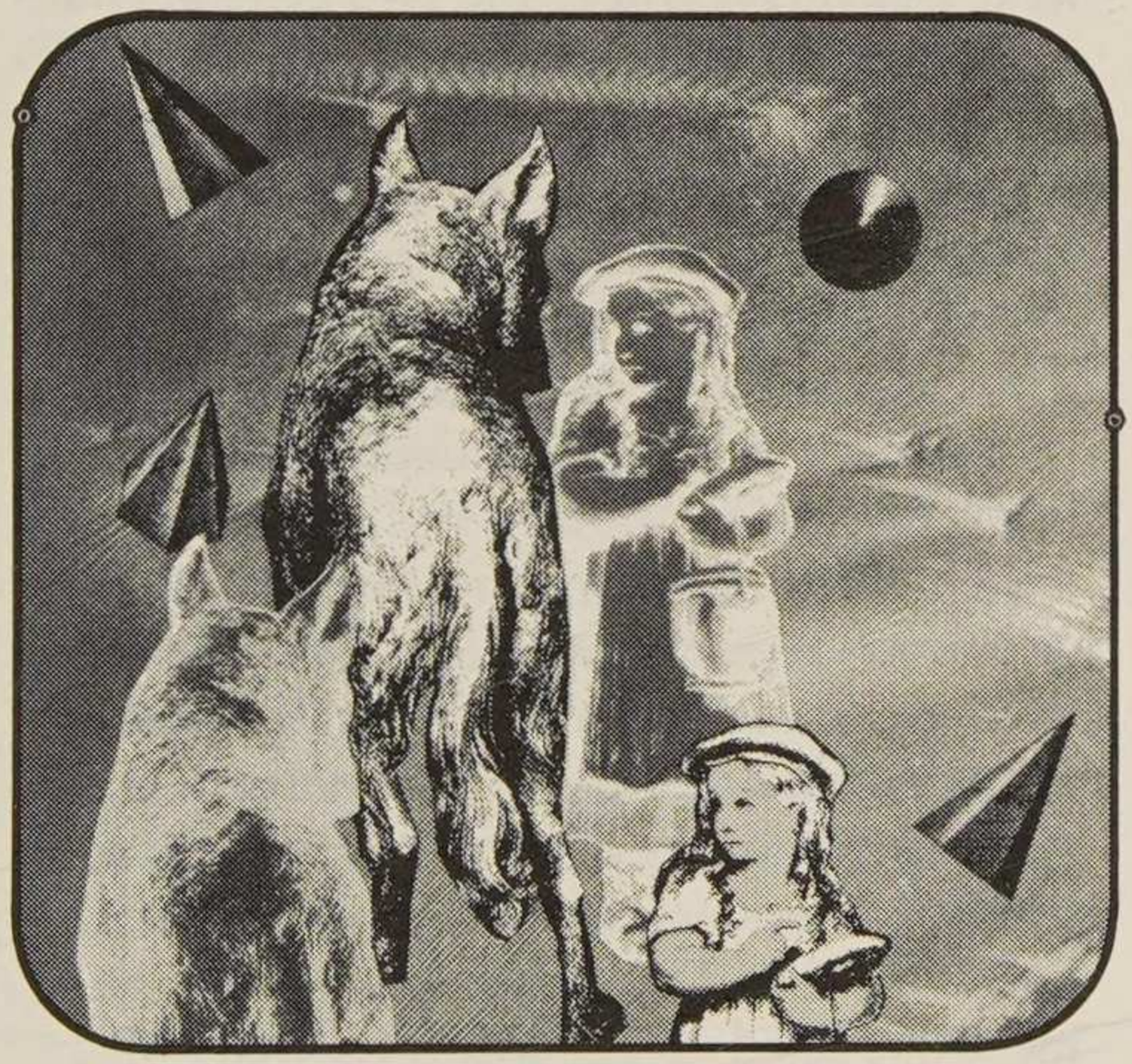


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Ricketts and Mrs. Stevenson, *Forêt interdite* is available in English under the title, *The Forbidden Forest.*

Readers will be struck by the multidimensional character of this novel. In one sense, as Eliade himself readily acknowledges, *The Forbidden Forest* may be seen as an historical novel, dealing with the events and activities of the protagonist, Stefan Viziru, as well as those of his lovers, friends, and foes during the turbulent twelve years, 1936-1948, in Romania, London, Lisbon, the Russian Front, and Paris. "Some episodes," according to the author, "for instance the bombardment of London on the night of September 9, 1940, are as much as possible exact descriptions of real events." Moreover, Eliade realistically portrays the precarious political mood and atmosphere in Romania, and the behind-the-scenes power struggle between the ill-famed fascist organization, the Legion of the Archangel Michael, commonly referred to as the "Iron Guard," and the communists. One cannot help but feel a tinge of sorrow in reading in this novel how many Romanians hoped against hope that Americans would come to their rescue.

Despite its historical framework, however, *The Forbidden Forest* is truly an original novel. Eliade is a genius in creating characters, all of whom are caught by destiny whether they realize it or not. In their struggle against destiny, some of them are driven to seek self-fulfillment at the expense of violating mores and social conventions, while others seek self-transcendence or an escape from the network of historical events and from the destructive "time," which is the central theme of this novel. The tangled story begins on the summer solstice (the Night of St. John) in a forest near Bucharest where the two central characters, Stefan and Ilena, meet. Eliade develops his novel by using the flashback technique. Indeed he often introduces flashbacks within flashbacks, indicating the diversity of the relationships within a single episode. Thus, as one critic suggests, Eliade's novel resembles a "cabinet of mirrors with endless reflections."

Understandably the attention of many critics has been drawn to one or another of various important motifs of *The Forbidden Forest,* while others have commented on the symbolical significance of the forest, the summer solstice, etc. It must be stressed, however, that *The Forbidden Forest* is not meant to be a literary illustration of Eliade's scholarly theories. To be sure, he skillfully uses his rich knowledge of myth and folklore, especially of the Romanian tradition: but these were imposed upon him "by the process of literary imagination itself," to quote his own phrase. To him, a creative novel reveals meanings of human existence in a different way from scholarly works. That is why this novel demands much from its readers, but at the same time amply rewards them.

Joseph Kitagawa is Dean of the Divinity School at the University of Chicago.

Man Into Wolf: An Anthropological Interpretation of Sadism, Masochism and Lycanthropy
By Robert Eisler, with a new introduction by Donald Lathrop. Santa Barbara: Ross-Erickson, Inc., Publishers, 1978. Pp. 263. Paper $3.95.

The Wolf Children
By Charles Maclean. New York: Hill and Wang, 1977, 1978. Pp. 319. $10.00.

An Imaginary Life
By David Malouf. New York: George Braziller, Inc., 1978. Pp. 154. $7.95.

Reviewed by Jane Yolen

Wolf-man/werewolf. They contain two contradictory images. On the one hand, the bestial, slavering berserker. On the other, *l'enfant sauvage*. And there are two ways of seeing the wolf-man/werewolf— as something on the outside, apart and alien or as something within that is barely contained by civilization's restraints.

Scientifically, the concept of feral man has been a stepchild with a few ardent advocates and legions of equally ardent opponents. But the poetic, philosophic, and artistic idea of feral man goes back to the myths and legends of our most primitive ancestors.

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cellent in its own way; although, just as feral man has had his detractors, so will these volumes.

Eisler's *Man Into Wolf* was written after the author had endured fifteen months in Buchenwald and Dachau. As might be expected, he philosophized on the savage or wolf side of man. The book, a re-issue of the controversial essay with its erudite anthropological inquiry into man's beginnings, has the original footnotes intact. They are a gold mine of folkloric and literary sources. There is also a rather sophomoric introduction by Donald Lathrop which touches on a variety of chic topics: EST, Hesse's *Steppenwolf,* Bakshi's movie "Wizards," and Lathrop's own conviction that World War III is upon us. But Eisler's essay—and more especially his notes—will be prized by anyone who is interested in the phenomenon of the beast-in-man and how it has come down to us through the cultures and years, from the Maenads through the Green Men, the Marquis de Sade, and the Nazis.

Charles Maclean's *The Wolf Children* is the most thorough, exhaustive (and sometimes exhausting) account of the Indian feral girls Kamala and Amala that has ever been written. Maclean discovered trails so old they were thought to have been nonexistent. He interviewed people who had seen the wolf-girls, lived with the wolf-girls, and even one man who had been a sixteen-year-old participant in the hunt which discovered the girls and killed the wolf that fostered them.

Maclean's book puts their story into perspective: within the historical India as it turned from colonialism, within the Anglicized Indian Christian church, and even within the family of the Anglophilic Reverend Mr. Singh. Maclean also traces the controversy which the revelation of the wolf girls produced: scientist against scientist, anthropologist against anthropologist, churchman against churchman. It is a story almost as fascinating as that of the girls.

But it is the girls, three-year-old Amala who died soon after being discovered and the survivor, eight-year-old Kamala, who take center stage. Maclean chooses wisely to tell their story as a narrative. Yet he never hesitates to interrupt this story with both sides of the ongoing controversy. And always, standing alongside the girls, are the Reverend Mr. and Mrs. Singh, active participants in the saga. For saga it is, containing all the elements of an old story: hairbreadth capture, near escapes from death, the battle of a holy man for a child's soul, wickedness in high places, and a miraculous yet agonizingly slow transformation from beast to man. Unfortunately, Kamala died before she was fully human, before her vocabulary consisted of more than a pitiful few words, or her responses to other humans could be seen to be more than those of a domesticated animal.

Maclean's prose is straightforward and vivid. His careful investigations amply support his contention that: "I am inclined to believe...that the Rev. Singh's diary account of what happened in the forest is true, though perhaps not the whole truth."

Then there is David Malouf's compelling novel of a wild child, *An Imaginary Life.* After a decade or more in which prolixity of prose style and tortuous plots have

reigned, the reader comes to the simple, poetic, gemlike lines of Malouf's book with both relief and pleasure. He writes like a storyteller, like a ballad singer, like a poet.

The voice of the novel is Ovid's, the poet of the *Metamorphoses*. Malouf moves both his character and the reader through a series of changes both real and imagined. Ovid thinks: "This is the true meaning of transformation. Our further selves are contained within us, as the leaves and blossoms are in the tree. We have only to find the spring and release it." That is splendid. It is both single and double of meaning, for *spring* is both seasonal and mechanical, recalling both the force of man and nature, a perfect metaphor for the book.

Ovid, exiled to an uncivilized village, where no language he recognizes is spoken and no rites he understands are performed, has become feral. Painstakingly he learns both the new language and the new life, saying: "Seeing the world through this other tongue I see it differently." It is his first metamorphosis.

Then he meets the wild child, a deer boy captured by the tribe. He tries to teach the child to speak the tribe's tongue, his new tongue, but he discovers that it is, instead, the boy who is teaching him. Ovid, the perfect poet of Roman excesses, peels back first one, then another layer of civilization until he is metamorphosed yet again to the beginning of the world where word and thing are one.

This is a perfectly realized novel, both philosophically and poetically, yet it probably will be doomed to cult status. Malouf shows us through the poet, the man of words, how language is both the link between humanity and civilization and the wall between humans and the natural world. Ovid knows the names but not the flowers, the wild child knows the flowers and needs none of their names. The child in this book, based on Itard's wild boy of Aveyron, is in some ways more real than Kipling's Mowgli, but in his own way, just as true.

Jane Yolen's latest work of fantasy is The Mermaid's Three Wisdoms *(Collins and World).*

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The Sacred: Ways of Knowledge, Sources of Life
By Peggy V. Beck and A.L. Walters. Tempe, Arizona: Navajo Community College Press, 1978. Pp. xii + 369. Paper $8.00.

Reviewed by Christopher Vecsey

The Sacred meets the needs of those who want an accurate, general introduction to American Indian religions. For years there have been excellent monographs on specific tribes' religions, insightful biographies of religious Indians, and countless articles analyzing features of Indian religions. But the few synthesizing studies have been inadequate: either hard to find (published abroad, in foreign languages, out of print), hard to read (written in technical or pedantic jargon), or hard to swallow (biased by condescending, reductionist, or Christian viewpoints). With admirable success, and without obtrusive polemic or esoterica, *The Sacred* describes the common ground of traditional American Indian religions, and examines some historical American Indian religious movements over the past five hundred, post-invasion, years.

A curriculum development project at Navajo Community College, *The Sacred* is a carefully organized, sensible textbook for anyone—White or Indian—of high school age or older. It defines religion in terms of intellect and emotion, individual and community, and it outlines the prominent aspects of traditional American Indian religions. Then it devotes a chapter to each aspect, including ceremonialism, oral narratives, cosmologies, ritual humor, and shamanism (the longest chapter, the core of the book). There are numerous examples illustrating each aspect, from various areas of native America, and in each chapter the authors refer to related passages in other parts of the book, giving the work an organic interconnectedness that matches its subject matter.

Especially effective is the authors' emphasis on the land base of Indian religions. *The Sacred* rightly perceives traditional Indian religions as part of a kinship relation between Indians and their environment: the earth, the ultimate source of their existence. Seen in this way, Indian religions promote life, and seek to protect against disease and other life-diminishing forces.

The authors discuss the White invasion of America and its damaging effect on Indian life. *The Sacred* recounts Christian missions; documents the religious persecution of Indians by the United States in the late nineteenth and early twentieth centuries; and describes Indian religious movements like peyotism and prophet dances, which have tried to re-balance Indian life wracked by environmental, medical, and social crises. The book is not antiquarian, but rather presents living traditions, as in Seminole and Navajo case studies. It recognizes that the sacred adapts to new situations, so it illustrates both continuities and changes in Indian religions. For example, there is the Wintu shaman, Flora Jones, who accommodates modern technology by sometimes using a tape recorder in her curing sessions to recall her trance utterances. ("She said at first her spirit helpers were critical of this, but soon got used to it.")

What are the book's shortcomings? It occasionally blurs real differences between tribal religions—it is, after all, a general synthesis. But it is not a simplistic book. The authors take into account the levels of meaning in rites and myths, and the importance in each person's following his or her own vision.

Second, it lacks references to many of the major scholars of Indian religions, while overutilizing the research of a few. Some footnotes are inaccurate or misleading. Mistaken spellings and dates; missing page citations; references to books not found in the bibliography—these are clumsy details which one hopes the authors will correct in future editions. One hopes, too, that the binding will improve; my copy fell apart immediately.

One hopes for these small improvements in future editions, but mostly one hopes simply for future editions. One wishes *The Sacred* a successful future because it is without a doubt the best available introduction to American Indian religions.

Christopher Vecsey teaches American topics at Hobart and William Smith Colleges. He is currently editing the life history of an Oneida Indian.

Deep Rivers
By José María Arguedas. Translated from the Spanish by Frances Horning Barraclough. Texas Pan American Series. Austin: University of Texas Press, 1978. Pp. ix + 248. $10.00.

Innocent Eréndira and Other Stories
By Gabriel García Márquez. Translated from the Spanish by Gregory Rabassa. New York: Harper & Row, Publishers, Inc., 1978. Pp. 183. $8.95.

Reviewed by Agueda Pizarro Rayo

José María Argueda's *Deep Rivers* is a cry of pain at the separation from the most deeply rooted, most emotionally significant, and most creative parts of the self. This rift is the product of the superimposition of one culture upon another which is characteristic of Latin America. In the fifteenth and sixteenth centuries, the Indian was conquered and violated by Spain, yet he survives, and his traditions although transformed by time are still the core and source of much modern Latin American art and literature.

Arguedas became an archaeologist in order to study his country's past. He also wrote poetry in Quechua, the language of the Indians of Peru and Bolivia. His knowledge of and love for the Andes and the people who inhabit them inspired his lifelong dedication to them and to his dream of giving Quechua its rightful place alongside Spanish as the official language of Peru. He sensed in Quechua a current of truth and suffering which had to speak its poetry. It does so through Ernesto, the central character of this autobiographical novel.

Ernesto is a blend of Spaniard and Indian. He longs to bring the Indian in him to the surface since he feels in Quechua. Like Arguedas, Ernesto is brought up by Indian servants in the kitchens and courtyards of his relatives' houses. And like Arguedas, he has a passion for the sad, haunting music of



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the Andes. The *huayno* gives form to his voice and feeds his imagination with rhythm and image.

In this searingly realistic and at the same time lyrical novel whose moving forces are fantasy and legend, Arguedas has transcended the personal and turned himself as a child into a symbol of the tragedy of his country. Most of the book takes place while Ernesto is in a school after being separated from his father, an itinerant lawyer. In the school the priests deny the importance of all that is most passionate in his nature and all that is natural to him. In his longing for his father and his homesickness for his Indian infancy, Ernesto turns to magic, creating with memory and bits of lore, songs, and stories he has heard, an inner language in which nature and inanimate things speak their Quechua souls. Each chapter conjures up some part of Ernesto's experience, calling, in spellbinding words, to those things that are significant to him. In the first chapter, where he is still with his father, he describes the stones of the Inca wall in Cuzco:

> The stones of the Inca wall were larger and stranger than I imagined; they seemed to be bubbling up beneath the whitewashed second story which had no windows on the side facing the narrow street. Then I remembered the Quechua songs which continually repeat one pathetic phrase: *yawar mayu,* "bloody river"; *yawar unu,* "bloody water"; *puk'tik yawar k'ocha,* "boiling bloody lake", *yawar wek'e,* "bloody tears."
>
> Couldn't one say *yawar rumi,* "bloody stone" or *puk'tik yawar rumi,* "boiling bloody stone"? The wall was stationary, but all its lines were seething and its surface was as changeable as that of the flooding summer rivers which have similar crests near the center, where the current flows the swiftest and the most terrifying. The Indians call these muddy rivers *yawar mayu* because when the sun shines on them they seem to glisten like blood. They also call the most violent tempo of the war dances, the moment when the dancers are fighting, *yawar mayu.*
>
> *"Puk'tik yawar rumi,"* I exclaimed, facing the wall.

In this passsage the rivers begin to flow through the novel. They are a constant, magical element, gods which are Ernesto's messengers to his father. The rivers come to be identified with his blood and the land with his body. The novel is worked around powerful images of natural phenomena, images whose impact is increased because they are expressed in both Spanish and Quechua. The effect of those passages of *Deep Rivers* where Quechua is introduced is not one of translation, but of metaphor—the moon and its dark side revealed, each half different, each completing the other. Ernesto, the *mestizo,* personifies this oneness in duality.

As he lives out the end of his childhood, he clings to the object which brings two of the gods in him, music and speech, together. The *zumbayllu* is a small wooden top, a universal toy whose spinning is a cult, a complex art among schoolboys all over Latin America. In *Deep Rivers* it embodies the longing for freedom and the poetic gift of the author and his character. It becomes the miniature receptacle of his double language. It sings for him to his father. It protects him from the many wars with which he comes in contact: the rebellion of the native women which is the central event of the plot, the war in the schoolyard, the war between child and man.

The characters of the novel are representative of all the elements of Peruvian society: landowner, soldier, priest, Indian, *mestizo, cholo* (an Indian who acts white). There is a black priest; a white, blonde, blue-eyed girl who is Ernesto's dream. Ernesto is all of them turned inside out. He is white outside and Indian inside. The eyes of his soul are turned outward as he projects himself toward what he sees, struggling to be free in his real nature.

Deep Rivers is also a novel about adolescence. While the boys in the school are still children, they are united by what is Indian in them. Somewhat like the characters in *Lord of the Flies,* they have a secret, ritualistic, animistic view of the world which they perceive with keen senses and open minds and which seems to reveal to them its hidden patterns and energy. As they reach manhood, they are changed by the society in which they must live. Antero, an older boy who is white but whose face is made magically *mestizo* by a constellation of dark birthmarks, is Ernesto's friend. It is he who makes the *zumbayllus* and who explains their power to Ernesto. It is significant that Ernesto has the same sympathy for women in general as he does for Indians. He sees them both as oppressed. An idiot woman who has been taken in by the priests, and who is sexually abused and humiliated by the older boys, is described as debased, voiceless, infinitely accepting her less than human treatment. This is only one side of the Indian character: total acceptance is counterbalanced by the pride and independence of the *chola* who leads the rebellion. Ernesto realizes that these women are one with the well-to-do white girls seduced by the school boys who flaunt the fact of each surrender. Ernesto is still a child, but he is overwhelmed by compassion for all these women. When the idiot is dying, Ernesto keeps her company and risks contagion with typhus by crossing her arms over her breast after she has died.

Deep Rivers ends in an atmosphere of death and sickness. Ernesto is sent to his uncle's hacienda where he runs from one *colono* hut to another calling to the Indians in Quechua to take him in. They do not dare to answer him. He watches, powerless, as a little girl pulls worms with a needle from the uncomplaining body of a dying baby. Ernesto is completely alone and there is despair all around him. It does not come as a surprise to find that Arguedas committed suicide.

In a book where language is symbol and the inclusion of Quechua is an image, the translation from Spanish to English is a delicate matter. Frances Horning Barraclough's is a superior translation and a responsible one. The Quechua is wisely left intact, explained where necessary by succint notes which offer to the reader a wealth of information about Peru. There is a good glossary of Quechua terms. John V. Murra's introduction is both informative and thoughtful. It contains several quotes from Arguedas' writings, among them a poem in which rivers are also a central image.

The introduction lets one ponder some of the causes of Arguedas' suicide: the bitterness of the Indians' lot, the inescapability of their fate, the hardness and lack of understanding of some Peruvian intellectuals,

combining to produce an unbearable burden, the hopeless frustration of his Indian self.

The ending of *Deep Rivers* is an expression of despair, true to the suffering of Arguedas' people; yet it cannot be said that the novel is a surrender to this despair. Arguedas finds vibrant, richly-colored facets, shards of powerful images, myths in all the living things around him and in all the living beings with whom he comes in contact. These luminous treasures are woven into a personal language, also a living thing, which expresses in its double tongue the beauty of Andean culture. *Deep Rivers* is not just an indigenist novel, it is the transformation of personal pain into universal symbol. Arguedas-Ernesto is like the angel of fire and snow encountered by Mohammed in his voyage through the heavens. His whole self heals the wound that splits him in two. He explores the conflict of the two worlds of the Latin American man in this *huayno* novel, the song of a seer child.

Innocent Eréndira and Other Stories contains, along with three recent tales, some examples of the author's prose from the forties and fifties. In these, the writing is placeless and timeless. They are ghost stories in which the dead speculate on the process of dying. Unlike Arguedas' terrifying and psychologically shattering treatment of the subject in the mind of his child-self, the Ernesto of *Deep Rivers,* these are studies of the reaction of the senses and the mind to dying and the fear of dying. As in Ingmar Bergman's movie, *Cries and Whispers,* the dead, vividly alive in memory, do surprising things to the living and to those who are still dying. It is as though their consciousness, gone from their bodies, had invaded the imaginations of the survivors. García Márquez' ghosts demand re-creation.

It seems that the early stories were written in the realm of pure imagination. One can see how that imagination worked and has continued to work in the later stories and in the novels. Like the surrealists, García Márquez has always joined disparate realities creating image after image from this union.

García Márquez' fictional characters are constantly making up images of themselves. They combine traditional archetypes with sensational newspaper stories and folk heroes. In *100 Years of Solitude,* Macondo is the microcosm of Colombia. "Innocent Eréndira" is set in another part of Colombia, the Guajira Desert, or salt flats, heart of smuggling country, the home of proud, matriarchally organized Indians, very different from those of the Amazon basin. There is ample material both for exciting reportage and for storytelling in the Guajira. The selling of Eréndira in a carnival atmosphere is most certainly based on fact. Yet the story takes each extraordinary happening and, in a hyperbole of associations, turns it into legend.

The grandmother in "Eréndira" has such legendary proportions. She is referred to as "the great white whale." Her whole person is an exaggeration of mythological proportions. Tyrannical, greedy, an archetypal dictator, fascinating in her self-assurance, almost charming in her monstrosity, painted and feathered, she is the powerful matriarch who makes all men her slaves through Eréndira's body. Wife and mother of smugglers, she speaks the story of her past as she sleeps. She wears a vest filled

with gold bars which have taken the place of the gaudy mansion that, through tired Eréndira's carelessness, was blown away by "the wind of her misfortune."

The most lyrical story in the collection is "Sea of Lost Time," an allegorical tale concerning a miracle in which the smell of roses drifts into a coastal town from the sea. The people of the town are changed by the experience, which really has to do with the enduring love of old Jacob, one of the townspeople, for his dead wife. The scent, the arrival of the stranger, and a visit to the depths of the sea are all manifestations of the power of the miracle.

García Márquez is the voice of his people's imagination, searching out with image the private emotions hidden inside popular beliefs about the dead, about love and passion. It is his use not only of existing legends and lore but his invention of new ones—using the techniques of small-town storytellers, mothers singing to their children, nurses scaring those children with ghosts and devils—that has made his writing so powerful. His art has been learned from the cradle and he has become the most skillful magician of all, the one who lets us smell the roses of the sea.

Agueda Pizarro Rayo is a poet who has published two books in Colombia. Her third will appear in both Spanish and English, to be published by Columbia University Press.

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Time, Space and Knowledge
A New Vision of Reality
By Tarthang Tulku. Emeryville, California: Dharma Publishing, 1977. Pp. 306. Paper $6.95.

Reviewed by Dennis Lewis

We take so much for granted about ourselves and our world—about the space and time in which we live—that real knowledge would seem an impossibility. Wherever we turn in our efforts to comprehend—however we look or think—what we finally see are only the opaque surfaces of our own assumptions: snapshots taken in a hall of mirrors. Against these assumptions some of us try to pit our gurus, groups, spiritual exercises, mathematical formulas, or scientific instruments—hoping to break through the patterns and limitations of our thought and perception and to grasp the answers to our deepest questions.

If Tarthang Tulku is correct, however, a totally different approach to knowing is possible—one that has little to do with answers. This is the knowing, the "unshakable clarity," that occurs when we open to the accomodating quality of "Great Space" and the evocative infinity of "Great Time." "When Space and Time are directly appreciated," says the author, "that is automatically Knowledge."

But Tarthang Tulku's conceptions of Great Space and Time have little to do with conventional views of space and time—going far beyond even the multidimensional space/time continuum of modern physics. For the author, Great Space and Time are the "Primordial Couple,"and Knowledge is their "child." What appear to be separate things are merely the result of incomplete vision—"timed out" focal settings on a vastness that resides both nowhere and everywhere at the same time. With complete vision, "there is no longer a 'looker,' but instead only a 'knowingness' which can see more broadly from all sides and points of view at once. More precisely, the knowing clarity *does not radiate from a center,* but is rather in everything, and everything is in it..."

For the author, a new appreciation of Time and Space can liberate us from the stagnant, interlocking conditions of our inner and outer world and bring us to a direct attunement with "Being." But for this, he says, we need, at least at the beginning, to "use thinking and observing in new ways, to break through the partitions defining things." At root, he says—and he tries to convey this through ideas of relativity and levels—all manifestation is simply the interplay of Great Space, Time, and Knowledge. There is nothing else.

Thus "the popular meditative injunction to 'be here now' is...probably misleading." In front of such an injunction, most of us simply close down, freezing the partitions we are accustomed to call ourselves. We cling to particular "focal settings" instead of opening to the positive presence that lies at the heart of being—a presence that bears within itself all possibility.

This is a rich and rewarding book, but there is no way to summarize either its meaning or its effect. There are no final answers here, only a remarkable attempt to bring us to the limits (and beyond them) of our capacity for thought and awareness. The book demands much from us: an honest effort to use all of our faculties—emotional, perceptive, and critical—to open to what, perhaps, can never be grasped.

Over the last nine or ten years, Tarthang Tulku, a Tibetan lama living in Berkeley, California, has been working

with psychologists, artists, scientists, and students to convey the methods and ideas of the Tibetan tradition. Though he has published numerous works, it is only with this new book that he seems to have found an effective method of literary transmission to serious Westerners. There is no religious language in this book, no scientific or Tibetan terminology. There is only rigorous, metaphysical analysis, combined with a series of difficult but powerful exercises that may help to open the reader in a balanced way, to a re-visioning of reality.

Dennis Lewis, a freelance writer living in San Francisco, is coeditor of Sacred Tradition & Present Need *and* On the Way to Self Knowledge.

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Love Song of the Dark Lord: Jayadeva's Gitagovinda
Edited and translated by Barbara Stoler Miller. The Indian Series of the Translations Collection of the United Nations Educational, Scientific and Cultural Organization. New York: Columbia University Press, 1977. Pp. xx + 225. $17.50, paper $3.95.

Classical Sanskrit Love Poetry
Translated by W.S. Merwin and J. Moussaieff Masson. UNESCO Collection of Representative Works: Indian Series. New York: Columbia University Press, 1977. Pp. viii + 204. $15.00.

Reviewed by David Shapiro

There is a sense in which all translation of poetry must be creative mistranslation, requiring a rigorous inner faithfulness to the text and an outer freedom of expression.

Both Barbara Stoler Miller's *Love Song of the Dark Lord* and W.S. Merwin's *Classical Sanskrit Love Poetry* are sensuous analogues for the originals, tactful in their relation to the colloquial, and free from scholarly barriers.

Miller's volume is an essential contribution to Indian study and to poetry in translation in general. She has given us the Indian equivalent of the *Song of Songs* without the usual sentimentality. Goethe was influenced by the "endlessness" of the *Gitagovinda*, and today, the American reader will be intrigued by the way in which the work is conceived as a complete event. Dance is implied, and a *raga* is always given as part of the possible performance of the text. And indeed, Miller vividly documents the variety of living performances the work

continues to initiate in India. We must agree with Miller when she speaks of this poem as an analogue to the great architectonics and sculptural complexities of India. Its twelve parts are an immense structural accomplishment. The poem is a synthesis, and the reader must to some extent create that womb-temple in which the song would enact most clearly all sacred and secular consummation.

Krishna and Radha are traced through the poem in every variety of beginning love, envy, jealousy, rage, and return to ecstasy. Thus, like the *Song of Songs*, the work is more than an anthology and illumines the inherent unity within the apparent duality of rupture and union.

Miller's translation is alive on a variety of levels. There is a constant "metaphysical quality" in which abstraction is dealt with sensitively and intelligently:

The sun's jewel light encircles you
As you break through the bonds of existence—
A wild Himalayan goose on lakes in the minds
of men.

and many alliterative adornments:

Soft sandal mountain winds caress
quivering vines of clove.

There are the humorous scenes of Krishna's play:

He hugs one, he kisses another, he caresses another
dark beauty.
He stares at one's suggestive smiles, he mimics a
wilful girl.

Here Miller permits her text to have the strength and clarity of prose. Elsewhere there is the courage to allow a rapturous ecstasy:

I fall on the bed of tender ferns;
he lies on my breasts forever.

The volume has a very rich apparatus of scholarship, but the poem itself is rendered cleanly and candidly, with no attempt to allegorize too quickly or deceptively. Miller has truly collaborated with her text.

W.S. Merwin worked with psychologist and translator Masson in a collaboration that has culminated in many fine English poems. The introduction is interestingly eclectic in its use of both Oriental and Freudian terminology in an attempt to understand the contradictions between ascetic and erotic modes. Again and again, *Classical Sanskrit Love Poetry* gives us very fine specimen texts, good both as poems by Merwin, and as contributions that are more voluptuous than anything we have previously seen in our American poetry. These translations remind us how rarely American poetry has had the courage to permit great happiness to flourish simply and without restraint. Throughout, these poems are delicate, sensuous and focused, and have a striking contemporary feeling:

Everywhere
me
vanishing
into him
like water
into the clay of a new jar.

and:

To my mind her
body unfurling
with joy of being young
flowering out of love
her eyes floating as with wine and
words wandering with love
then the undoing of the knot
of her sari
that is Release.

There are love poems included that demonstrate, too, every detail of erotic misery as well, but always there is a kind of "bliss" that underlies them. Certainly this volume must appear in a more accessible paperback form as have recent translations from the ecstatic Persian.

David Shapiro teaches literature at Columbia University. He is the author of many volumes of poetry including Lateness, *Overlook/Viking (1978), and* The Page-turner, *Liveright (1973). He was nominated for a National Book Award in 1971.*

Coming Home
By Lex Hixon. Garden City: Anchor/ Doubleday, 1978. Pp. 233. Paper $2.95.

Reviewed by Frederick Franck

This book should be read as an initiation into the contemplative life, or as a refresher for the initiated. If not for some—in this reader's view—regrettable flaws, it could have been magnificent. But even these may be valuable as stimulants to reflection.

The *Coming Home* of the title refers to Enlightenment in various sacred traditions, and this homecoming is celebrated in a series of essays on Eastern and Western sages and their approach to that perennial goal of the human pilgrimage. I was a bit put off by the very first paragraph of the introduction: "From Enlightenment radiate the Insight, Compassion..."etc. Indeed these may well radiate, but without Insight —transcendental Insight—is there Enlightenment?

Fortunately I read on, and came to the conclusion that on the whole Lex Hixon succeeds in an undertaking that is as ambitious as it is risky. In ten short chapters he takes the reader on a guided tour through the contemplative universes of minds as diversified as Heidegger (one day some bold spirit may risk to write a whole book without quoting Heidegger!) and the Baal Shem Tov; as dissimilar as the sober Krishnamurti and the God-intoxicated Ramakrishna; as juxtaposed as the taciturn tenderness of Ramana Maharshi and the lyrical verbosity of Bawa, the Sufi saint from Sri Lanka. For good measure he adds penetrating chapters on such ancestral figures as Plotinus and St. Paul, on the Zen classic known as the Ten Oxherding Pictures, and even on the I Ching. It may be a whirlwind tour, but it is neither superficial nor insensitive.

Each chapter is intended "to be read at one sitting in order to draw the reader into a complete world of experience." Following these directions for use, I found that Hixon's evocation of spirits as contrasted as Ramakrishna and Ramana Maharshi (those two modern saints, whom Heinrich Zimmer saw as harbingers of a new world spirituality) makes one feel almost viscerally in their presence. Especially in the mere sixteen pages of the chapter on Ramana Maharshi, one feels confronted with this most sober-minded, literally down-to-earth master, who is conjured up almost more powerfully than in the elaborate biographies written by Arthur Osborn, his Western disciple, and by the saintly M.T.P. Mahadevan, who in his youth sat at Ramana's feet.

In the essay on Plotinus, father of all Western mysticism, Hixon manages to dis-

till the essence of a world view which, like Ramana's, declares that spiritual disciplines need not be focused through any religious commitment of a devotional or doctrinal nature.

The chapter on that "ecstatic rabbi" for whom the Messiah had already come, I found particularly moving. For St. Paul, according to Hixon "the events of the crucifixion and the resurrection are envisioned as occurring inwardly for all those who mystically *die* to human limits, to *rise* at divine radiance....Spiritual transmission leads outside history into the divine radiance at the core of our conscious being..."and therefore "we are as close to this Christ Nature now as Paul was during his lifetime; the intervening centuries only produce the psychological illusion of distance."

It is a wide vista Hixon offers as his act of faith in the universal nature of the specifically Human which manifests itself as the trans-personal, trans-historic dynamic of the Christ Nature; as the Buddha Nature, embodied in the Bodhisattvas of Mahayana; as the Messiah Nature, asleep and hidden within all human beings but awakened and disclosed in the Hassidic Tzaddik. Ramana Maharshi speaks of it as Self, Krishnamurti as Truth.

Once the empirical, karmic ego is discounted, or "emptied," the vision of the entire universe and all its life-forms reveal themselves as being of one nature with the Godhead—to speak in theistic terms—or with Sunyata, No-Thingness in non-theistic ones. It is the awakening to this Common Ground beyond Oneness and Twoness, which is so simply and splendidly made visible in the sequence of the Oxherding Pictures.

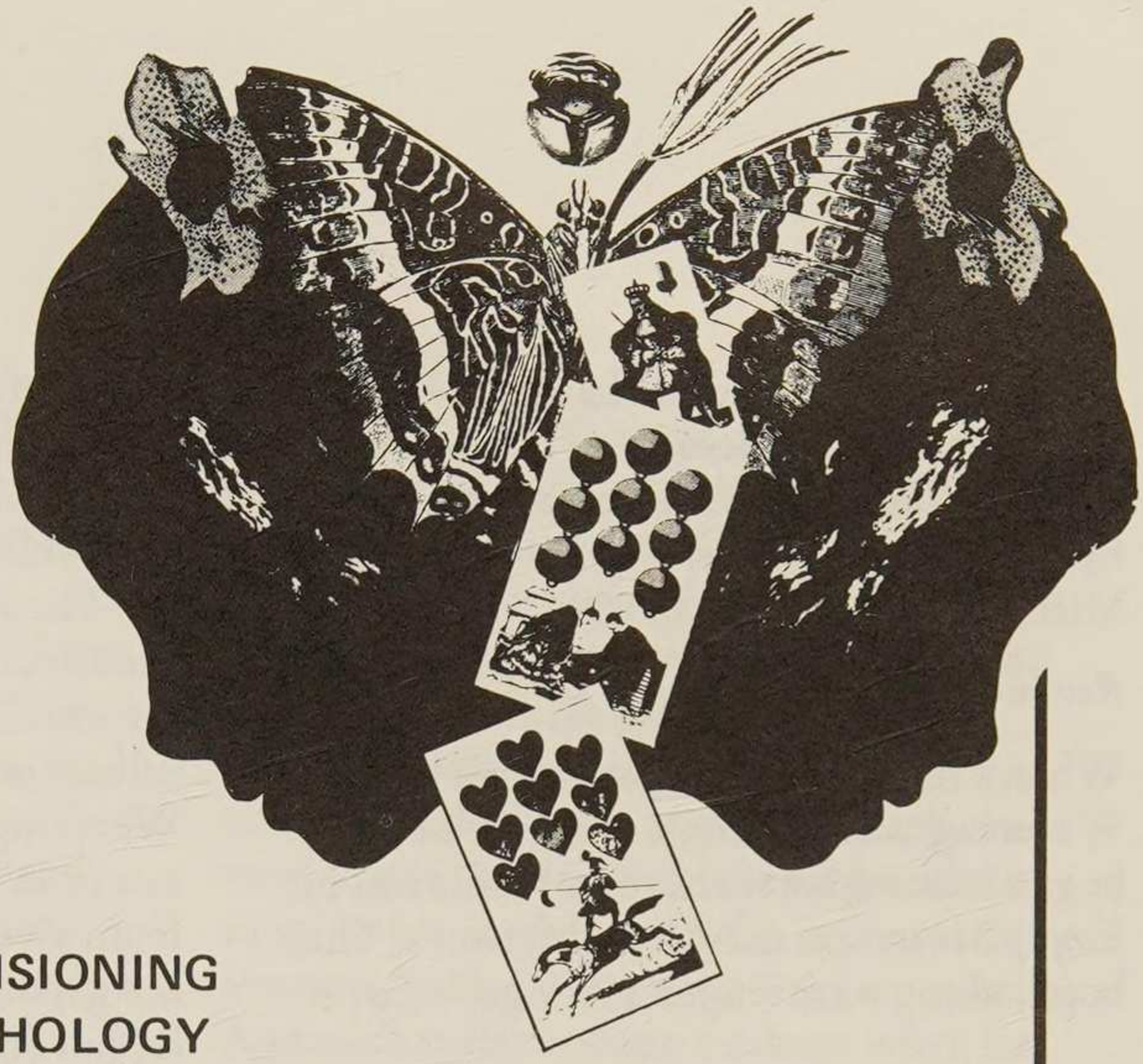
So much is noble and palpably lived through in these essays, that what struck me as flaws were not only an at times overly exalted terminology, but the interpolation of the author's own enlightenment experiences. In such august company I'd rather refrain from disrobing. But that is a matter of taste about which, of course, *non est disputandum.*

I also have some doubt about the usefulness of the final chapter, "Designing an Experiment in Contemplation." In this form it does not strike me as functional and could be perhaps even potentially confusing to the neophyte. Since "modern society is a conspiracy against the life of the spirit" as Charles Péguy saw so clearly generations ago, it is a grave responsibility to guide those who try to escape from this conspiracy. The general direction and the endpoint of our pilgrimage are beautifully evoked throughout the book. Where there is no agreement on the details of the itinerary however, maps may prove hazardous. Since reliable masters are in as short supply as reliable therapists, no safer counsel could be offered, perhaps, than that given by Ramana Maharshi for whom the true guru is the primal awareness that is the Ground of the Heart. Refraining from offering any technique of contemplation, undercutting all doctrinal frameworks and pious posturings, he calls contemplation an attitude to life: an attitude to be lived.

But these are personal and hence minor reservations, more than compensated for by delight. *Coming Home* succeeded indeed, as the author intended, in drawing this reader "into a complete world of experience."

Frederick Franck's most recent book is Zen and Zen Classics: Selections from R.H. Blyth, *Vintage Books.* EveryOne: the Timeless Myth of "Everyman" Reborn *will be published by Doubleday in the fall.*

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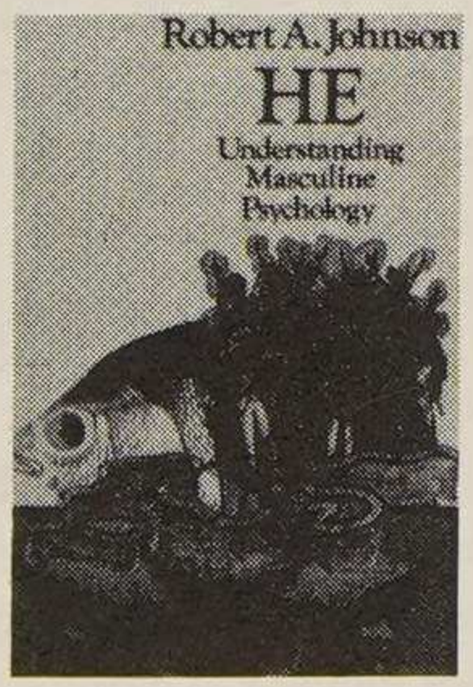


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Little Owl: An Eightfold Buddhist Admonition
By Janwillem van de Wetering. Illustrated by Marc Brown. New York: Houghton Mifflin, 1978. Pp. 64. $6.95.

Reviewed by Jerry Griswold

When I first heard that Janwillem van de Wetering was writing a children's book I began looking forward to it. I had read his *Empty Mirror* six, maybe eight, times. That book, along with Eugen Herrigel's *Zen in the Art of Archery,* are the best books I know about Zen training. And something in that book made me feel that van de Wetering was well suited for a children's book.

The author of *The Empty Mirror* is both a beautiful writer and a fool—two virtues for a children's author. There are wonderful stories in the book. Just before van de Wetering knocks on the door of a Zen monastery in Kyoto, he buys a bowl of noodles from a vendor. One of the noodles falls on the ground and a chicken attacks it furiously. Jan and the vendor laugh together. It is a wonderful scene, and all the more wonderful because the author doesn't make the connection between himself as the hungry seeker and the scrabbling chicken at his feet.

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While waiting for the children's book I came across his *Glimpses of Nothingness,* the second and last of his reports about his Zen training. While I liked it, and have read it twice, there were times when I was disappointed to discover that van de Wetering had become clever; but I was happy to find that his master was a fool. Sometimes when the master cut trees, they fell on his head; and at other times, he drove trucks into snowbanks. He was a fool, wise beyond his knowing, and his foolishness apparently helped van de Wetering find his way out of questions that lead nowhere.

Then the children's book arrived. *Little Owl* is a series of stories that illustrate the Buddhist Eightfold Path. In the opening story a Little Owl, because he is reasonably polite, listens to his Mother Owl. She asks him, "What's most important in life?" and he replies, "Right Wisdom." Proud of his answer the Little Owl flies to the forest to educate a wild boar. The boar is intent on finding grubs to eat but the Little Owl keeps interrupting to give him lessons about Right Wisdom. Exasperated, the boar charges and knocks Little Owl on his back. The Little Owl is bedridden for a few days, so Mother Owl tells him a story. This provides the reader with an opportunity to turn the page and read the next story, about Little Koala Bear.

Little Koala Bear answers his mother's question ("What's most important in life?") with "Right Intentions." He, too, becomes a zealot. He stands in his tree and yells "LOVE, LOVE, LOVE" until he falls out and bruises his head. He goes to bed and the Mother Koala Bear tells him a story. It is about a Little Crow, and so on. Each creature, kitten, squirrel, rhino, rabbit, sloth, supplies his mother with the appropriate answer. Each creature becomes a zealot. And each suffers comic mishaps when he takes his method too far.

Little Owl reminded me that in some schools of Zen study there are "ranks" of koans. This is not supposed to be discussed. Nevertheless, outside the meditation halls the monks, like boy scouts comparing merit badges, often talk about what koan-questions they have solved and what "level" they have achieved.

Though there are official titles for each class of koans, I am inclined to call the first level "cow" koans (What is the sound of one hand clapping? What was your face before your mother gave birth?). They teach receptivity, like the cow's. And they teach how to deal with the dreck that bubbles up in meditation and how to deal with bogus questions—like a cow meeting an unwelcome thing on its way, they are mooed away.

Little Owl might be associated with the second-level koan, what I like to call "bull" koans (the most famous of which is "Stop a herd of horses that is charging at you!"). These koans are meant to be answered with actions and they are meant to shake the student out of any blissful torpor he may feel after having solved his first koans. And they are also meant to teach the student to do without trying.

All the creatures of *Little Owl* find themselves in this position. They have happened upon some truth and they have be-

COLLEGE CAMROSE LUTHERAN

come zealots a bit too pushy in their enthusiasms. They try. And they suffer for it.

I think, finally, that *Little Owl* is not a book for children. It is, for one thing, too didactic. It is a kind of Buddhist version of those tracts that, for example, explain to children what happens if they don't brush their teeth. It, too, tries.

"Hansel and Gretel" has no rules. Or, rather, if there are rules to be found, they are found afterwards. In *Little Owl* the rules, the Eightfold Path, came first and the story after that. You will remember, in this regard, that one day the Buddha, instead of giving a philosophical discourse, gave a sermon at which he simply twirled a flower. The Flower Sermon is for children, of all ages.

I almost found myself asking who should read *Little Owl*? But that is the wrong kind of question because if this book reveals anything, it is the danger of the "shoulds" the little creatures urge on others. Who, then, will read this book? I have been surprised to discover how many people buy and read picture books, and it is those people who will buy *Little Owl.* If for no other reason, they will buy the book for Marc Brown's illustrations. His rhinoceros pictures alone are worth the purchase. Even some of the backgrounds, of earth and of water, are felicitous globs of ink that—I don't know how to describe them—are delightfully messy or oily. And his picture of Little Sloth, with gigantic saucer eyes after too much meditation, is wonderfully comic.

Little Owl is for us and for those we know. It is for those who, after the first flush of success in meditation, rushed out to announce and urge a method upon their friends, and, a little afterwards, felt sheepish about their pushiness. And it is for everyone who has been accosted by someone else pressing upon them some new technique, some new teacher, some new recipe for yogurt salvation. It makes us laugh affectionately at these enthusiasms and at ourselves. *Little Owl* is like standing in front of a mirror and noticing that the figure opposite us has a bit of egg on its face and reaching forward to dab it off, find it is our own.

Jerry Griswold occasionally writes for The Nation, The New Republic, *and* New Age Journal. *He teaches literature at Northeastern University.*

D.M. Dooling is Publisher and Editor of PARABOLA.

Mircea Eliade, world authority in the study of comparative religions, has taught at the University of Chicago in the Department of Religion since 1956. He edits the journal "History of Religions" and is the author of many books that have been influential in the study of religious thought, *The Myth of the Eternal Return, The Two and the One, The Sacred and the Profane, The Forge and the Crucible,* and *Shamanism* among them. Most recently he has published his journals, *No Souvenirs,* and a major novel, *The Forbidden Forest.* He is currently involved in a comprehensive history of religions "from the birth of Adam to the death of God," to which he expects to devote the balance of his career.

Ted Enik, PARABOLA's cover artist for this issue, is a freelance illustrator with a special affinity for medieval art and fantasy. He lives in New York City.

Jacob Needleman is Professor of Philosophy at San Francisco State University and Director of the Graduate Theological Union Program for the Study of New Religious Movements in America. His publications include: *The Sword of Gnosis, Sacred Tradition and Present Need, On the Way to Self Knowledge* and *A Sense of the Cosmos.* He will publish *Understanding the New Religions* in 1978 and *The Art of Living in the Cultural Revolution* in Spring, 1979. Professor Needleman is at work on a critical examination of current efforts to rediscover and re-establish the primal contemplative disciplines of the Christian tradition.

Elémire Zolla received his doctorate in Jurisprudence from the University of Turin in 1954. He has served on the faculty of Letters and Philosophy at the University of Rome as Chairman of the American Literature Department since 1959. Dr. Zolla is the author of *The Eclipse of the Intellectual* (Funk & Wagnalls, 1968), *Language and Cosmology* and *The Use of Imagination and the Decline of the West* (Golgonooza Press, Ipswich, 1976 and 1978 respectively) in English, as well as many volumes in Italian. He is the director of *Conoscenza Religiosa,* a quarterly devoted to contemporary religious thought.

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