

## *Cosmic Rhythms and Terrestrial Life*

**T**O ASSUME THAT WHAT comes to pass in the wide expanses that surround the earth planet has little or no effect on the life of the earth is the legacy of the world-view that described planets solely as dead physical matter held in orbit by purely mechanical forces, and held that the stars, as infinitely distant suns, could not possibly transmit anything across the vacuum of space. This legacy is still a cornerstone in the thought of such laboratory scientists as the majority of biologists who work on the “biological clocks.” They claim that these clocks only appear to be affected by cosmic rhythms, but try to show in laboratory test cases that they are endogenous adaptive mechanisms intrinsic to the biochemistry of some species. The chemical base or the mechanism of the clock itself has, as yet, not been isolated. Apart from mechanical, photoenergetic influences derived from the sun and moon, our planet appears to be a hermetically-sealed space capsule run by intrinsic machinery.

In contrast, the sages of all the peasant and gardening societies have never doubted the influences of forces stemming from the cosmos, which control the seasons and influence plant, animal and man alike. These influences were not seen as mere mechanical forces, but experienced as powerful, personified beings that could be appealed to and dealt with in various ways. Calendar-makers and specialists, able to interpret seasons and celestial events, were employed by all these peoples. In this way, the ecologically appropriate action could be



Limbourg Brothers, *Très Riches Heures* of Jean, Duke of Berry, Musée Condé, Chantilly

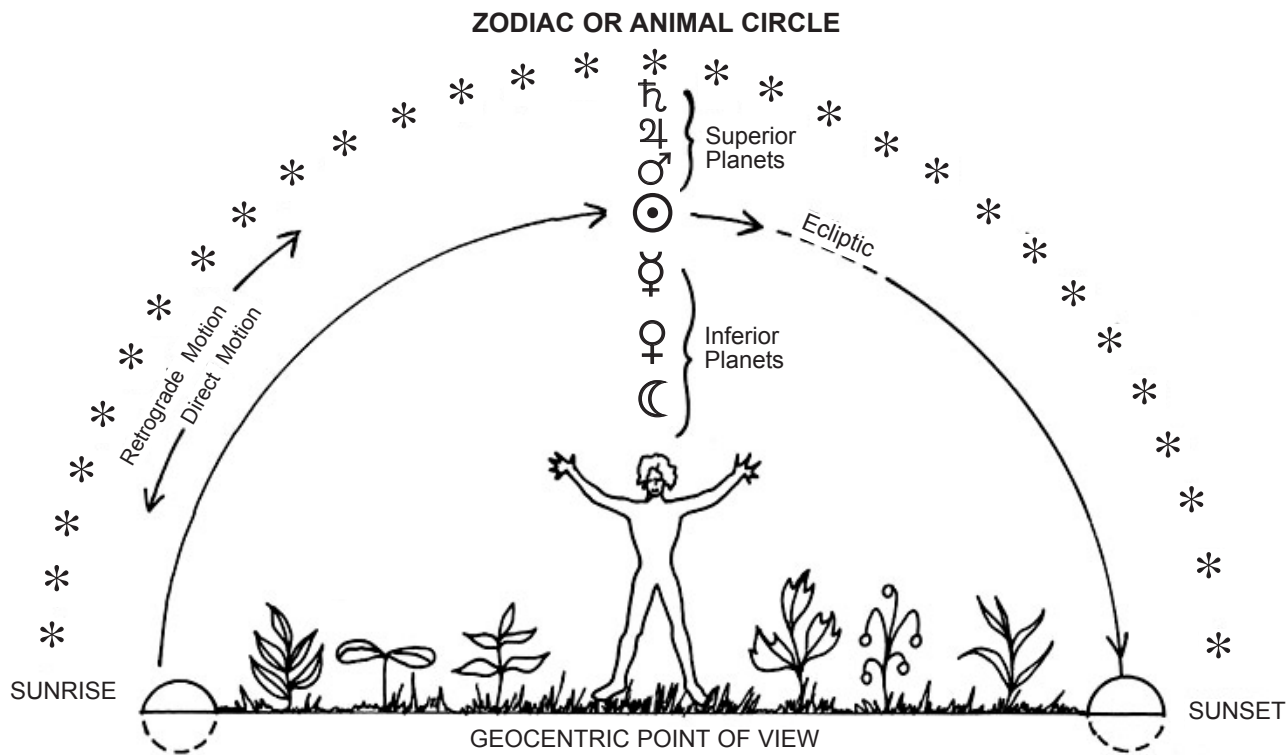
### *March*

*The organic affinity between heavenly bodies and earthly affairs was given popular expression in books of hours, which appeared in medieval and early renaissance Europe. From the most famous instance of this genre, the above scene shows a peasant preparing the soil for sowing. The surmounting star panel depicts the Pisces and Aries glyphs and the sun-wagon.*

taken when the signs were right. The Tukeno of Brazil, for example, know that when the Pleiades dips below the horizon in the evening after sunset it is time to plant the crops just in time for the seasonal rains. When Sirius started to appear on the horizon just before sunrise, it was time for the fertile midsummer flood of the Nile Valley, marking

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Planet Art



the start of ancient Egypt's agricultural year. The European peasant's rule for sowing, planting, harvesting, animal husbandry and herb gathering, going back to ancient Babylonian, Chaldean and Egyptian sources, are of the same order. Agricultural rules relating to astronomical phenomena are recorded by the Romans Plinius (23 A.D.) and Virgil (70-19 B.C.). The countless sky, moon and sun deities of tribes and nations throughout the ages, each demanding certain taboos, rituals, feasts and proscriptions are considered by current anthropologists not so much superstitions, as functional ways of adapting to specific environments.

In the West, with the change of calendar and the influence of the Enlightenment, the planetary gods were shorn of their powers and dethroned. Only the most backward peasants clung stubbornly to a tradition which degenerated into superstition and eventually lost its empirical base. What was at one time a functional belief system came in time to be relegated to the velvety parlors of "official" occultists, esotericists, and astrologers. It was safely relegated to those with a leaning toward mystery and the obscure, whose nerve had failed them in the "brave new world." As the crisis of culture deepens, more people are drawn to these topics, while at the same

time, there lingers in the minds of some farmers and gardeners the feeling that there must be more to the plant and animal world than is taught in the agricultural extension courses. The current situation finds a revitalized interest in the beliefs of astrology and moon-sign planting ....One need not merely believe anymore [in folk intuitions], or intuitively follow archaic tradition, because clear evidence is accumulating quickly that the earth is not a sealed mechanism running its course, but an organism that is open and responsive to the influences streaming in from the cosmos....

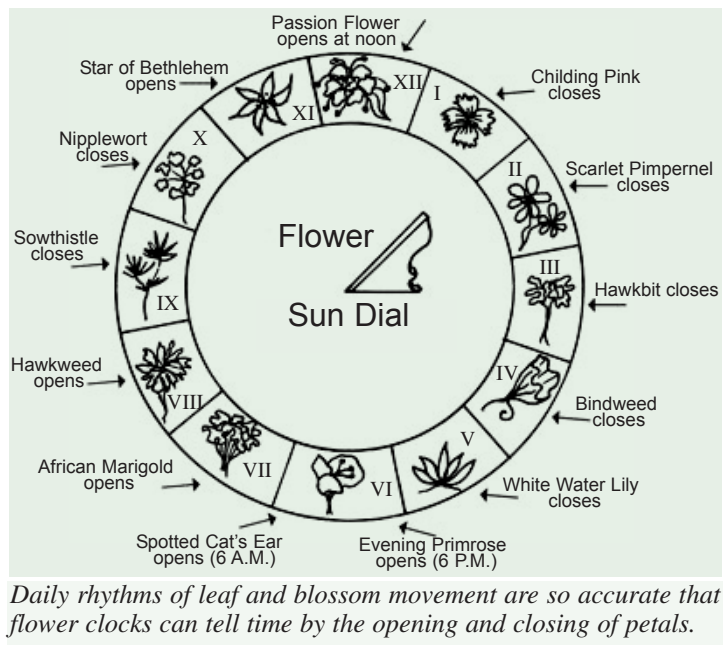
The complexity of [lunar and planetary] rhythms *in toto* has the result that the conditions of the heavens are never exactly the same. They are always somewhat different, although their orbits and cycles are orderly. We see then, that the analogy of a clock [cited in an omitted passage] is not quite justified, for in the clock we have a finite system, where events are repeatable, whereas in cosmic conditions we have an infinite system. The heavens never go back to an exact original starting point, a fact which makes a perfectly accurate calendar impossible. This makes the analogy of an organism, with its rhythmic life, much more appropriate.

For scientists, research on lunar and planetary

effects becomes a hot iron, since the factors are innumerable and no experiment is exactly repeatable. One cannot say to the moon: "Wait a minute, could you repeat this?" or say to the planets: "You are insignificant variables; we will not consider you in this experiment." It is safer for such a scientist to infer an endogenous system of biological clocks and intrinsic mechanisms to explain plant and animal life, while considering the whole cosmos an "irrelevant variable"! However, evidence points in other directions—to those that indicate cosmic influences. The farmer and gardener can be assured when he plants his crops in the right seasons and in the right signs and phases, that there is something to it.

All of life is rhythm and pulse. Death is the cessation of rhythm. The rhythms of living plant and animal organisms are in synchronicity with, or permutations of, cosmic rhythms. These living pulsations, be they circadian, monthly, annual, 4-year, 8-year, 9-year, or other cycles, all have some cosmic counterpart. In plants and in lower animals these rhythms are in direct phase with the cosmic phenomena, whereas in the higher animals these rhythms are obscured by the fact that internalized rhythms and impulses are provided by the inner cosmos of the inner organs and endocrine system.

The rhythms of life (growth, petal movement, assimilation, etc.) are expressed as manifestations and demanifestations in material space. Organic forms, but also some inorganic forms such as crystals, are images of cosmic forms and forces sculpted into matter. Flowers and leaf nodes show spiral relations that are mathematically equivalent to the ratios of the movement of planets as seen from a geocentric point of view. Organic forms, such as spirals, vortices, radial symmetry, bilateral symmetry, and the combinations and allometric permutations thereof, are archetypal, hinting at sympathy with planetary orbits, galactic whorls, lunar phases and other cosmic occurrences. Given these analogies of rhythm (time) and form (space configurations), one can postulate a connection of some sort between organic life and cosmic influences. The connection could be one of causality, in



which the cosmic force uses the organism's response. It is easy to imagine how organisms, in their life functions, can vibrate with the wide range of electromagnetic energy that constantly bombards this planet from outer space. Such energy reaches from the extremely short gamma and x-rays, through the ultraviolet, the visible spectrum, the infrared to the long radio waves. We see the effect of lunar gravity on water, causing the tidal behavior of seashore fauna; and the plants with their green tissue are photo-receptive like our retinas, monitoring the instreaming visible light from the cosmos.

On the other hand, the relation between the cosmic phenomena and the terrestrial counterpart might not be one of causality, but might be one of synchronicity, both of them the expression of a deeper-lying archetypal factor. Time and space have been separated analytically in western thought. Primitive thought, such as found among the Hopi Indians, makes no such distinctions. For them, every time has its space and every space has its time. Though time and space are principally connected manifestations, we will treat them separately in our discussion of cosmic influences.

### Time and Cosmic Rhythms

The most common and simplest rhythm is the daily (circadian, after F. Halberg, 1960) movement of the sun (solar day) or the revolution of the heav-

only vault (sidereal day). This rhythm profoundly affects all life, including one-celled organisms. It includes the daily opening and closing of flower petals, and the movement of leaves in some plants, such as the bean, into nightly vertical sleep positions and horizontal day positions. These daily rhythms are so accurate that, in the 18th and 19th centuries, flower clocks were planted in gardens where it became possible to tell time by the opening and closing of the petals.

[Gunther]Wachsmuth describes the daily bipolar rhythm in plants. A period of concentration around 3:00 AM, characterized by maximum cell division, auxin production, starch accumulation in the lower plant parts and a minimum of sap excretion, gives way in the morning to the opening of leaves into the daytime position with increases in assimilation, respiration and secretion. In the afternoon at 3:00 PM, there is maximum glucose production and cell elongation, which gives way in the evening to starch accumulation in the lower portion of the plants after they assume sleeping positions. A ten-year study by Frank A. Brown, Jr., of Northwestern University, shows a daily metabolic cycle in potatoes. Brown shows that there is a peak metabolic activity in potatoes at sunrise, at noon and in the evening. This cycle follows yearly fluctuations; while in January the noon peak is the greatest, in mid-year it is less significant, and in the fall, the morning peak is the greatest. "The metabolic pattern varies systematically with the celestial longitude of the earth as it makes its annual journey around the sun." He concludes that geomagnetic and electromagnetic forces seem to be at work, which are, of course, affected by the planets. Other studies show a time awareness in cockroaches which scavenge at night, and in fruit flies which hatch only in the early morning hours when moisture (dew) exists. Even human beings show circadian rhythms, which are upset when a jet trip crosses time zones.

Lunar rhythms, which work mainly through

water, are effective in all organisms. Most organisms are composed mainly of water, and all organisms go through an amorphous zygote stage, in which these forces can be especially influential. Instruments have been developed that are so sensitive that they can measure lunar tides in a tea cup. Researchers find that it is harder to sterilize water during the full moon. Plinius writes in his Natural History that it is best to sell fruits picked before the full moon because they will be plumb full of water, but for one's own use, it is wise to

SIDERIAL CYCLE	28d	88d	225d	1yr	2yrs	12yrs	30yrs
PLANET	☾	♃	♀	☉	♂	♃	♁
	(monocots)		(dicots)				
PLANTS	ANNUALS		BIENNIALS	PERENNIALS	CONIFERS		

*This table shows the relationship between planetary cycles and types of plants. The more mutable planets govern simpler plants (grasses and herbs germinate from single-leaf seeds), while the woodier, longer-lasting plants are more influenced by planets with longer cycles.*

pick fruit around the new moon period for they will keep better. He states that it is best to castrate animals or prune trees during the new moon to avoid excessive bleeding. Modern scientists find this to be true also.

Frank Brown, in a study of fiddler crabs, finds, besides the diurnal cycle of color change, a lunar rhythm of 12.4 hours, timed exactly to the lunar tides. Oysters, which open their shells at high tide and close them at low tide, when transported from the East Coast to Evanston, Illinois, changed their rhythms to what the tides would be there, if the seashore were in Illinois.

Lunar rhythms are especially evident in the lower animals, particularly in the reproductive cycle. The timing by these animals is sometimes awesome. The grunion, or smelt, of California, ride the last flood tide wave onto shore to deposit eggs and sperm in the sand and ride the first ebb tide wave back out into the sea. Two weeks later, the next tide that is equally high, is the exact moment when, at the crest of the tide, the larvae hatch to be swept out into the sea. Similarly dramatic, the female paloloworms of the South Pacific rise to the ocean surface at an exact time at

dawn when the moon reaches its last quarter in November, where their egg-laden tails break off and float. Immediately all the males rise to the surface where their sperm-containing hind quarters also break off.

In relation to fertility, Eugen Jonas of Czechoslovakia found that in the human female the ability to conceive coincides with the lunar phase when she was born. From this insight, a nonchemical birth control method was developed which is claimed to be 98% effective. Weather, rainfall cycles, barometric pressure, changes in the magnetic field and other phenomena have been correlated with the moon. Police officials, bartenders, and caretakers of mental patients also tell of the effects of the moon on the human psyche. Planets are the source of powerful radio waves, and each planet leaves in its wake a tail of electromagnetic disturbances. We can easily assume that the planets, other than the moon and sun, have an effect on the earth. One such effect is the 11-year sunspot cycle found by Sir J. Herschel. Sunspots occur when planets are in conjunction or opposition to the sun; that is, when they form one gravitational arc that has an uneven pull on the corona of the sun. The effects include icebergs off of Iceland, good vintage years for Bordeaux, drought patterns in India, the shift of flowering dates of some plants, earthquakes and others.

There are 35-year and 85-year rhythms superimposed on this 11-year cycle. An 8-year precipitation cycle has been related to Venus. George Unger, in his laboratory at Dornach, Switzerland (1971), using the drop-method investigation of fluids developed to indicate water quality, shows the effects of the constellations on water. Measured quantities of fluids to be tested are dropped into glycerine, creating characteristic drop patterns. The glycerine is so sensitive that the characteristic drop patterns are disturbed slightly when conjunctions and oppositions occur.

An interesting observation was made by Joachim Schulz in investigations of beech nut harvest. Beech trees bear heavily about every six to eight years, according to records kept since 1799. The irregular quantity of the harvests is not dependent only on the climate and weather, since

the whole species in various locations bears well during good years despite climate variations. This seemed to be random behavior. In the years 1948 to 1951, Schulz was able to correlate the harvest patterns with Jupiter, Mars and Saturn positions in various constellations. On this basis he set up probable harvest predictions to the year 1985. G. Wolber and S. Vetter reinvestigated this in 1971 and found the predictions verified. Other investigations on planetary influences by L. and E. Kolisko show that the crystallization of certain salts in the laboratory are affected by the positions of the planets.

Corresponding to the sidereal rhythms of the plants are the growth rhythms of the plant families. The rapid growing herbaceous annuals are linked with the fast-moving subsolar, or nearer, planets. This places most monocots under the influence of the moon and Mercury, and the dicot herbs with Venus and the sun. Biennials and shrubs are related to the two-year rhythm of Mars, perennial herbs and hardwoods to the 12-year cycle of Jupiter, and most of the conifers to the long-enduring cycle of Saturn.

The preceding might seem to be somewhat simplistic, analogical thinking; but, in keeping with the goetheanistic [scientist and writer Johann Wolfgang Goethe, 1749-1832] approach, we will make note of the analogies of simultaneously appearing phenomena before jumping to conclusions. Here we are perhaps not dealing with the law of causality, but with the law of synchronicity. In the next section [next *Rays* issue] on plant forms, other factors will become evident which show that the correlations indicated are perhaps not quite as arbitrary as they at first appear. We are only touching on the subject of rhythms and their correlation with cosmic phenomena here. There are undoubtedly other rhythms, ranging from cycles of glaciation (250,000 years) to very short-term rhythms occurring within organs or cells which can be correlated in frequency curves with various short wave patterns derived from the cosmos.

It is the studying and understanding of such rhythms in their relation to the etheric formative forces that underlies the rhythmic preparation of homeopathic medicines, and of the stirring of liquid manures and bio-dynamic preparations. (Continued) □