

Neil McBrean/The Ecologist



PLAN PLANT PLANET

BY TERENCE MCKENNA

OUR PRESENT GLOBAL CRISIS is more profound than any previous historical crises, hence our solutions must be equally drastic. I propose that we should adopt the plant as the organizational model for life in the 21st century, just as the computer seems to be the dominant mental/social model of the late 20th Century, and the steam engine was the guiding image of the 19th Century.

This means reaching back in time to models that were successful 15,000 to 20,000 years ago. When this is done it becomes possible to see plants as food, shelter, clothing, and sources of education and religion.

The process begins by declaring legitimate what we have denied for so long. Let us declare Nature to be Legitimate. All plants should be declared legal, and all animals for that matter. The notion of illegal plants and animals is obnoxious and ridiculous.

Re-establishing channels of direct communication with the planetary Other, the mind behind nature, through the use of hallucinogenic plants is the last best hope for dissolving the steep walls of cultural inflexibility that appear to be channeling us toward true ruin. We need a new set of lenses to see our way in the world. When the medieval world shifted its world view, secularized European society sought salvation in the revivifying of Classic Greek and Roman approaches to law, philosophy, esthetics, city planning and agriculture. Our dilemma will cast us further back into time in a search for models and answers.

The impact of hallucinogenic plants on the evolution and emergence of human beings has not been widely examined, yet it promises to provide

an understanding not only of primate evolution but also of the emergence of the cultural forms unique to *Homo sapiens*.

The adaptive advantage conferred by using immune-stimulating or appetite-suppressing plants is not difficult to understand. Less easy to understand is the way in which plant hallucinogens might have provided similar yet different adaptive advantages to our remote ancestors. These compounds do not catalyze the immune system into higher states of activity, although this may be a secondary effect. Rather, they catalyze consciousness, that peculiar, self-reflecting ability that has reached its greatest apparent expression in human beings. One can hardly doubt that consciousness, like the ability to resist disease, confers an immense adaptive advantage on any individual who possesses it.

There is a hidden factor in the evolution of human beings which is neither a "missing link" nor a *telos* imparted from on high. I suggest that this hidden factor in the evolution of human beings, the factor which called human consciousness forth from a bipedal ape with binocular vision, involved a feedback loop with plant hallucinogens. This is not an idea that has been widely explored, though a very conservative form of this notion appears in R. Gordon Wasson's *Soma: Divine Mushroom of Immortality* (Wasson, 1971). Wasson does not comment on the emergence of humanness out of the primates, but does suggest hallucinogenic mushrooms as the causal agent in the appearance of spiritually aware human beings and the genesis of religion. Wasson feels that omnivorous foraging humans would sooner or later have encountered hallucinogenic mushrooms or other psychoactive plants in their environment. The strategy of these early human omnivores



was to eat everything and to vomit whatever was unpalatable. Plants found to be edible by this method were then inculcated into the diet. The mushrooms would be especially noticeable because of their unusual form and color. The state of consciousness induced by mushrooms or other hallucinogens would provide a reason for foraging humans to return repeatedly to those plants, in order to re-experience their bewitching novelty. This process would create what C.H. Waddington (1961) called a "creode," a pathway of developmental activity (in other words, a habit).

Habituation to the experience was insured simply because it was ecstatic. "Ecstatic" is a word unnecessary to define except operationally: An ecstatic experience is one that one wishes to have over and over again.

If hallucinogens are operating as exo-pheromones, that is inter-species chemical messengers, then the dynamic symbiotic relationship between primate and hallucinogenic plant is actually a transfer of information from one species to another.

The primate gains increased visual acuity and access to the transcendent Other. The benefits to the mushroom arose out of the primate domestication of previously wild cattle, hence the expansion of the niche occupied by the mushroom. Where plant hallucinogens do not occur, such



processes take place with great slowness, but in the presence of hallucinogens a culture is introduced to ever more novel information, sensory input and behavior, and thus is bootstrapped to higher and higher states of self-reflection.

Hallucinogenic plants may have been the catalysts for everything about us that distinguishes us from other primates except perhaps the loss of body hair. All of the mental functions which we associate with humanness, including recall, projective imagination, language, naming, magical speech, dance, and a sense of *religio* may have emerged out of interaction with hallucinogenic plants. Our society more than others will find this theory difficult to accept because we have made pharmacologically obtained ecstasy a taboo. Sexuality is a taboo for the same reason: such things are consciously or unconsciously sensed to be entwined with the mysteries of where we came from and how we got to be the way we are.

THE SOLUTION to much of modern malaise, including chemical dependencies and repressed psychoses and neurosis, is direct exposure to the authentic dimensions of risk represented by the experience of psychedelic plants. *The pro-psychedelic plant position is clearly an anti-drug position. Drug dependencies are the result of habitual, unexamined and obsessive behavior; these*

Use of drugs by human societies is as old as humanity itself. What is it in the nature of human beings that allows them to form nearly symbiotic relationships with plants and chemicals in the natural, and now technological, world around them? Our omnivorous dietary habits have made us the vector of myriad mutagenic influences that together have shaped human evolution in strange and unique ways. The emergence of self-awareness and of cultural forms is a reflection of internal states of awareness that are profoundly mediated by our relationships to psychoactive and physiologically active plants, foods, drugs, and spices. Detailed discussion of the previously unexamined relationships of drugs to cultural self-expression provides a new way of thinking about human history; as a series of arrangements, made and broken, between human beings and plants. Paleolithic shamanism provides the archaic paradigm. The Eleusinian mysteries provide the Classical example, and modern use of coffee, alcohol, sugar and tobacco illustrate the way in which exploration

Why People Take Drugs



The Greek herbalist Dioscorides receives a mandrake plant from Heuresis, the goddess of discovery. Since ancient time, mandrake has been credited with numerous magical and healing powers, in part because of the root's resemblance to a human figure. It is still used in the treatment of asthma, coughs, and hay fever.

and new technologies seem to mean new drugs and new habits. The Age of Exploration introduced more than spices into Europe; so great was the European obsession with addiction to white sugar that slavery, no more than a curiosity in the West since the fall of Rome, was brought back with a vengeance in the 15th century in order to provide labor for the killing work of sugar production. When the English overseas tea trade collapsed, the British use of military force secured the right to sell opium in China. This policy provides the bridge to modern developments: the scourge of refined narcotics, heroin, cocaine and crack. The modern synthetic drugs have created financial rogue empires in many cases more powerful than the nations that sanctioned their creation. The message is that history is to be seen as a series of evolving and transforming relationships to plants, from corn to *Cannabis*, a process that we need now to understand as modern pharmacology and lifestyles put into our hands ever more powerful ways to satisfy and explore the habit habit.

The Mazatecs say that the mushrooms speak. If you ask a shaman where his imagery comes from, he is likely to reply: "I didn't say it, the mushrooms did." No mushroom speaks, that is a primitive anthropomorphization of the natural, only man speaks, but he who eats these mushrooms, if he is a man of language, becomes endowed with an inspired capacity to speak. The shamans who eat them, their function is to speak, they are the speakers who chant and sing the truth, they are the oral poets of their people, the doctors of the word, they who tell what is wrong and how to remedy it, the seers and oracles, the ones possessed by the voice. "It is not I who speak," said Heraclitus, "it is the Logos." Language is an ecstatic activity of signification. Intoxicated by the mushrooms, the fluency, the ease, the aptness of expression one becomes capable of are

The Plant That Speaks



Psilocybe mexicana.

such that one is astounded by the words that issue forth from the contact of the intention of articulation with the matter of experience. At times it is as if one were being told what to say, for the words leap to mind, one

after another, of themselves without having to be searched for; a phenomenon similar to the automatic dictation of the surrealists except that here the flow of consciousness, rather than being disconnected, tends to be coherent; a rational enunciation of meaning. Message fields of communication with the world, others and one's self are disclosed by the mushroom. The spontaneity they liberate is not only perceptual but linguistic, the spontaneity of speech, of fervent, lucid discourse, of the logos in activity; for the shaman, it is as if Existence were uttering itself through him . . . words are materializations of consciousness; language is a privileged vehicle of our relation to reality. — Henry Munn, "The Mushroom of Language," in *Hallucinogens and Shamanism*, Michael Harner, ed., Oxford Press, 1973, pp. 88-89.

are precisely the tendencies in our psychological makeup that the psychedelics mitigate. The plant hallucinogens dissolve habits and hold motivations up to inspection by a wider, less egocentric and more grounded point of view within the individual. It is foolish to suggest that there is no risk, but it is equally uninformed to suggest that the risk is not worth taking. What is needed is experiential validation of a new guiding image, an overarching metaphor able to serve as the basis for a new model of society and the individual.

The plant/human relationship has always been the foundation of our individual and group existence in the world. What I call the Archaic Revival is the process of reawakening awareness of traditional attitudes toward nature, including plants and our relationship to them. The Archaic Revival spells the eventual breakup of the pattern of male dominance and hierarchy based on animal organization, something that cannot be changed overnight by a sudden shift in collective awareness. Rather it will follow naturally upon the gradual recognition that the overarching theme that directs the Archaic Revival is the idea/ideal of a vegetation Goddess, the Earth herself as the much ballyhooed Gaia — a concept well documented by 19th-century anthropologists, most notably Fraser, but recently given a new respectability by Riane Eisler, Marija Gimbutas and others.

The closer a human group is to the gnosis of the vegetable mind — the Gaian collectivity of organic life — the closer their connection to the archetype of the Goddess, hence to the partner-



ship style of social organization. The last time that the mainstream of Western thought was refreshed by the gnosis of the vegetable mind was at the close of the Hellenistic era, before the Mystery religions were finally suppressed by enthusiastic Christian barbarians.

My conclusion is that taking the next evolutionary step, the Archaic Revival, the rebirth of the Goddess and the ending of profane history, are agendas that implicitly contain within themselves the notion of our re-involvement with and the emergence of the vegetable mind. That same mind that coaxed us into self-reflecting language now offers us the boundless landscapes of the imagination. Without such a relationship to psychedelic exo-pheromones regulating our symbiotic relationship with the plant kingdom we stand outside of an understanding of planetary purpose. And understanding of planetary purpose may be the major contribution that we can make to the evolutionary process. Returning to the bosom of the planetary partnership means trading the point of view of the history-created ego for a more maternal and intuitional style.

The widely felt intuition of the presence of the Other as a female companion to the human navigation of history can, I believe, be traced back to the immersion in the vegetable mind which provided the ritual context in which human consciousness emerged into the light of self-awareness, self-reflection, and self-articulation; the light of the Great Goddess.

What does it mean to accept the solutions of

vegetable forms of life as metaphors for the conduct of the affairs of the human world? Two important changes would follow from adopting this assumption:

The feminizing of culture on a level that has yet to be fully explored; Green Consciousness means recognizing that the real division between the masculine and the feminine is not a division between men and women, but rather is a division between ourselves as conscious animals — omnivorous, land-clearing war-makers, supreme expression of the yang — and the circum-global mantle of vegetation — the ancient meta-stable yin element that constitutes by far the major portion of the biomass of the living earth.

An inward search for values. Inwardness is the characteristic feature of the vegetable, rather than the animal, approach to existence. The animals move, migrate and swarm while plants hold fast. Plants live in a dimension characterized by the solid state, the fixed and the enduring. If there is movement in the consciousness of plants then it must be the movement of spirit and attention in the domain of the vegetal imagination. Perhaps this is what the reconnection to the vegetal Goddess through psychedelic plants, what the Archaic Revival actually points toward, that the life of the spirit is the life that gains access to the visionary realms resident in magical plant teachers. This is the truth that shamans have always known and practiced. Awareness of the green side of mind was called *Veriditas* by the 12th-century visionary Hildegard von Bingen.

A NEW PARADIGM capable of offering hope of a path out of the cultural quicksand has to provide a real-world agenda addressed to the escalating problems that the planet faces. There are several domains in which the rise of awareness of *Veriditas* might help stave off Armageddon:

Detoxification of the natural environment. This is a process that is naturally carried out by the combined action of the atmosphere, the biological matrix and the oceans. This planet-wide process was able to take care of even urban industrial waste, until modern industrial technology became a truly global phenomenon. Planting species of *Datura*, the plants once a part of the religious rites of the Indians of Southern California, and other plants that leach heavy metals from the earth and sequester them in their cellular tissue, is an example of a natural process that could help clean up our environment. Recognizing the many ways in which the biological matrix of the earth functions to avert toxification, recognizing that nature is working to sustain life, might go a



Green Inheritance

The shrub *Datura stramonium* can act like a toxin sponge, leaching heavy-metal elements from polluted soils. The toxins are concentrated in its tissue, which can then be removed.

long way toward building a political consensus to actively participate in saving that same life.

Connectedness and symbiosis. Like plants, we need to maximize these qualities. Plant-based approaches to modeling the world include awareness of the fractal and branching nature of community action. A tree-like network of symbiotic relationships can now replace the model of evolution that we inherited from the 19th Century. The earlier model, that of the tooth-and-claw struggle for existence, with the survivor taking all, is a model based on naive observation of animal behavior. Yet it was cheerfully extended into the realm of plants to explain the evolutionary interactions thought to cause speciation in the botanical world. Later, more sophisticated observers (C. H. Waddington and Erich Jantsch) found not the War in Nature that Darwinists reported but rather a situation in which it was not competitive ability but *ability to maximize cooperation with other species* that most directly contributed to an organism's being able to function and endure as a member of a biome. Plants interact with each other through the tangled mat of roots that connects them all to the source of their nutrition and to each other.

The matted floor of a tropical rain forest is an environment of great chemical diversity; the topology approaches that of brain tissue in its complexity. Within the network of interconnected roots complex chemical signals are constantly being transmitted and received. Co-adaptive evo-

lution and symbiotic relationships regulate this entire system with a ubiquitousness that argues for the evolutionary primacy of these cooperative strategies. For example, *mycorrhizal* fungi live in symbiosis on the outside of plant roots and gently balance and buffer the mineral-laden water that is moving through them to the roots of their host.

Whole system fine-tuning is needed. If the phenomena associated with biological harmony and resonance could be understood, then such large-scale systems as global banking or global food production and distribution could be more properly managed. The Gaian biologists, Lovelock, Margulis and others have argued persuasively that the entire planet has been self-organized by microbial and planktonic life into a meta-stable regime favorable to biology and maintained there for in excess of two billion years. Plant-based Gaia has kept a balance throughout time and space. And this in spite of the repeated bombardment of the earth by asteroidal material sufficient to severely disrupt the planetary equilibrium. We can only admire — and we should seek to imitate — such a Tao-like sense of the planet's multi-dimensional homeostatic balance. But how? I suggest we look at plants — look more deeply, more closely, and with a more open mind than we have done before.

Recycling. Like plants we need to recycle. On a cosmic scale we are no more mobile than plants. Until this point in history we have modeled our more successful economic systems on animal predation. Animals can potentially move on to another resource when they exhaust the one at hand. Since they can move to new food sources, they potentially have unlimited resources. Plants are fixed. They cannot easily move to richer nutrients, or leave an area if they foul or deplete it. They must recycle well. The fostering of a plant-based ethic that emulates the way in which the botanical world uses and replaces resources is a



sine qua non for planetary survival. All capitalistic models presuppose unlimited exploitable resources and labor pools, yet neither should now be assumed. I do not know the methods but I suggest that we start turning to the plant world to discover the right questions to ask.

Photovoltaic power is part of the shift toward an appreciation of the elegance of the solid state that plants possess. Plants practice photosynthetic solutions to the problems of power acquisition. Compared to the water- or animal-turned wheel, which are the Ur-metaphors for power production in the human world, the solid-state quantum-molecular miracle which involves dropping a photon of sunlight into a molecular device that will kick out an electron capable of energetically participating in the life of a cell seems like extravagant science fiction. Yet this is, in fact, the principle upon which photosynthesis operates. While the first solid-state devices arrived on the human cultural frontier in the late 1940s, solid-state engineering had been the preferred design approach of plants for some two thousand million years. High-efficiency photovoltaics could today meet the daily needs of most people for electricity. It is the running of basic industries on solar energy that has proved difficult. Perhaps this is nature's way of telling us that we aspire to too much manufacturing.

A global atmosphere-based energy economy. The approach of vegetational life to energy production is called photosynthesis. This process could be modeled by the creation of a global economy based on using solar energy to obtain hydrogen from seawater. Solar electricity could supply most electricity needs, but the smelting of aluminum and steel and other energy-intensive industrial processes make demands that photovoltaic electricity is unlikely to be able to meet. However there is a solution: plants split atmospheric carbon dioxide to release energy and oxygen as by-

The factors that ordinarily limit growth in the temperate region — low temperatures, lack of water and a short growing season — are of little importance in the humid tropics. Except on alluvial land and in areas where the soil is frequently enriched by volcanic dust, however, the stock of available mineral nutrients is quite small. The rain forest is able to flourish under these conditions because a large fraction of the available nitrogen, calcium, phosphorus, potassium and other minerals is held in the vegetation

Matter and Energy in the Rainforest



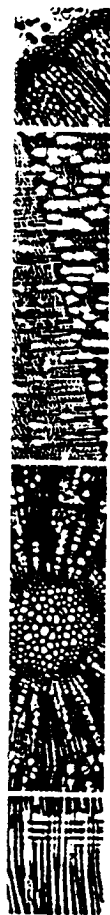
Green Inheritance

itself. The nutrients contained in dead wood and leaves and in the excretions and dead bodies of animals are quickly released by the activities of the decomposer organisms. Once the dead material has been broken down the minerals do not remain in the soil but are almost immediately taken up by the roots of the trees and other plants. Thus, although the total stock of nutrients is not large, recycling is rapid. It is also efficient; very little is lost from the system.

—Scientific American, Dec. 1973, p. 63.

products. A similar but different process could use solar electricity to split water, to obtain hydrogen. This hydrogen could be collected and concentrated for later distribution. Plants have been very successful at finding elegant solutions based on material present at hand; a hydrogen economy would emulate this same reliance on inexhaustible and recyclable materials.

The notion is a simple one really; it has long been realized by planners that hydrogen is the ideal resource to fuel a global economy. Hydrogen is clean; when burned it recombines with the water it was chemically derived from. Hydrogen is plentiful; one third of all water is hydrogen. And all existing technologies — internal-combustion engines, coal-, oil- and nuclear-fired generators could be retro-fitted to run on hydrogen. Thus we are not talking about having to scrap the current standing crop of existing power production and distribution systems. Hydrogen could be "cracked" from seawater at a remote island location and then moved by the already existing technology that is used for the ocean transport of liquid natural gas from its production points to market. The objection that hydrogen is highly explosive and that proven technologies for handling it do not exist has largely been met by the liquid-natural-gas industry and its excellent safety record. Hydrogen accidents could be extremely destructive, but they would be ordinary explo-



sions; local, non-toxic and without release of radioactivity. Like plant life itself, the hydrogen economy would be non-polluting and self-sustaining; burned hydrogen recombines with oxygen to again become water.

An international effort of extraordinary scope would be necessary to begin to move toward a proof-of-concept demonstration of the feasibility of a hydrogen economy. Granted that there are many possible problems with such a scheme. But no plan for the production of energy sufficient to meet the needs of the 21st Century is going to be without difficulties.

Nanotechnology. The era of Molecular Mechanism (*WER* #54, p. 9) promises the most radical of the green visions since it proposes that human-engineered quasi-biological cells and organelles take over the manufacturing of products and culture. Nanotechnology takes seriously the notion that manufacturing techniques and methods of manipulating matter on the micro-physical scale can affect the design process of the human-scale world. In the nanotech world, dwellings and machines can be "grown" and everything that is manufactured is closer to flesh than to stone. The distinction between living and non-living, and organic and artificial, is blurred in the electronic coral reef of human/machine symbiosis contemplated by the savants of nanotechnology.

From *Vegetalismo*

(To be accompanied by the musical notation for icaro to increase the effects of ayahuasca from Luna 1984a)

These plants [tobacco and ayahuasca] belong to a series of species called "doctores" by local practitioners, because if ingested under certain conditions, they are believed to be able to "teach" the shamans. During the initiation period, which may last from some months up to several years, these plants are ingested periodically and successively, while a very strict diet and sexual continence are observed. The informants I worked with affirm that the spirits or mothers of the plants present themselves to the initiated, either during the visions they elicit, or during the dreams, and teach them how to diagnose and cure certain illnesses, how to dominate evil spirits who live in the earth, in the water or in the air, how to travel through time and space, and how to perform a series of shamanic tasks.

These powers are acquired mainly through the memorization of magic melodies or songs, called icaros. The number and quality of their icaros is the best gauge of the knowledge and power of a shaman. All my informants claim to know dozens of them. . . .

Each plant has its icaros, so that the repertoire of the shaman apprentice expands as he keeps adding other plants to the basic ayahuasca preparation (*Banisteriopsis caapi* + *Psychotria viridis*), or when he ingests other plant-teachers that are taken by themselves. The acquisition of magic chants or melodies and the memorization of myths during shamanic initiation seem to be a widely reported phenomenon. I have not yet made a systematic bibliographic survey, but it is possible that the association of the learning of magic chants or melodies with the absorption of the psychotropic plants is quite common. It is found among the Huichol, who ingest peyote (*Lophophora williamsii*) and other psychotropic plants, among the Mazatec,



This young man is holding the most potent of the South American hallucinogens, known among the Kamsá Indians as culebra borrachera (Methysticodendron). He will drink a tea of this plant, material rich in scopolamine and other intoxicating alkaloids, to induce visions and to establish "learning spirit" with his teacher.

Where the Grab Range

Preservation of biological diversity. The life on this planet and the chemical diversity that it represents are likely to be the only sources of biologically evolved compounds until the day that we discover another planet as teeming with life as our own. Yet we are destroying the living diversity of our world at an appalling rate. This must be stopped, not only through the preservation of ecosystems but also through the preservation of information about those ecosystems that has been accumulated over thousands of years by the people who live adjacent to them. It is impossible to underestimate the importance for human health of preservation of folk knowledge concerning healing plants. All the major healing drugs that have changed history have come from living plants and fungi. Quinine made conquest of the tropics possible, penicillin and birth control pills remade the social fabric of the twentieth century. All three of these are plant-derived pharmaceuticals. My partner Kat and I work in this area by managing a botanical garden in Hawaii (see p. 54) that seeks to preserve the plants utilized in Amazonian shamanism, one of many such systems of knowledge that are fast disappearing.

The measures outlined above would tend to promote what might be called a sense of Gaian Holism, that is a sense of the unity and balance of nature and of our own human position within



that dynamic and evolving balance. It is a plant-based view. This return to a perspective on self and ego that places them within the larger context of planetary life and evolution is the essence of the Archaic Revival. McLuhan was correct to see that planetary human culture, the global village, would be tribal in character. The next great step toward a planetary holism is the partial merging of the technologically transformed human world with the archaic matrix of vegetable intelligence that is the Overmind of the planet.

I hesitate to call this dawning awareness religious, yet that is what it surely is. And it will involve a full exploration of the dimensions revealed by plant hallucinogens, especially those structurally related to neurotransmitters already present and functioning in the human brain. Careful exploration of the plant hallucinogens will probe the most archaic and sensitive level of the drama of the emergence of consciousness; it was in the plant/human symbiotic relationships which characterized archaic society and religion that the numinous mystery was originally experienced. And this experience is no less mysterious for us today, in spite of the general assumption that we have replaced the simple awe of our ancestors with philosophical and epistemic tools of the utmost sophistication and analytical power. Our choice as a planetary culture is a simple one: go Green or die. ■

Icaro to increase the ayahuasca visions.



who take mushrooms of the genus *Psilocybe*, among mestizo practitioners using San Pedro (*Trichocereus pachanoi*), among the Yanomamo of southern Venezuela and northern Brazil, who use epena (*Virola theidora*). I have found the idea that certain plants teach magic melodies intimately linked with the use of ayahuasca among Indian and mestizo populations of Caqueta, in Colombia, and in the provinces of Loreto, Ucayali and

Madre de Dios in Peru. In the state of Acre, in Brazil, there are communities who ingest the preparation of *Banisteriopsis caapi* + *Psychotria viridis* under the name Santo Daime. All these communities possess *himnarios*, collections of songs inspired by Santo Daime to certain privileged members. Some of these communities have memorized up to 3,000 *himnos*.

[Both healing shamans and those who

practice sorcery] affirm that their powers are embodied in their *icaros*. Don Alejandro, another of my informants, put it in these words: "A man is like a tree. Under the appropriate conditions he grows branches. These branches are the *icaros*."

... The shaman is often at the same time a scientist, an artist, a hunter and a farmer, and a doctor of the body and the soul. ... The work to be done is enormous and fascinating, and should be carried out with urgency, before our old wise men are carried away by time.

Dr. Luna's recordings of Amazonian shamans singing magical incantations are available from Lux Natura, 2140 Shattuck Avenue #2196-W, Berkeley, CA 94704; catalog free. These songs were recorded during Peruvian and Colombian ayahuasca sessions during the last ten years.

Vegetalismo, by Louis Eduardo Luna, is available from the author (\$20 postpaid). Write him c/o Swedish School of Economy, Arkadiankatu 22, 00100 Helsinki 10, Finland.