The idea of the Koryak is that a person drugged with agaric fungi does what the spirits residing in them (wa’pag) tell him to do. "Here I am, lying here and feeling so bad," said old Ewiupet from Paren’ to me, "but should I eat some agaric, I should get up and commence to talk and dance. There is an old man with white hair. If he should eat some agaric, and if he were then told by it, 'You have just been born,' the old man would at once begin to cry like a new-born baby. Or, if the agaric should say to a man, 'You will melt away soon,' then the man would see his legs, arms, and body melt away, and he would say, 'Oh! Why have I eaten of the agaric? Now I am gone!' Or, should the agaric say, 'Go to The-One-on-High,' the man would go to The-One-on-High.... 'Oh, I am dead!' that man would say. 'Why have I eaten of the agaric?'

But when he came to, he would eat it again, because sometimes it is pleasant and cheerful. Besides, the Agaric would tell every man, even if he were not a shaman, what ailed him when he was sick, or explain a dream to him, or show him the upper world or the underground world, or foretell what would happen to him."

—Vladimir jochelson, 1908

The white man goes into his church and talks about Jesus. The Indian goes into his tipi and talks to Jesus.

—Quanah Parker

Before the twentieth-century era of laboratory synthesis, most of the drugs and poisons useful to man were manufactured by plants in the form of pharmacologically active nitrogen-containing organic compounds called alkaloids. There are about 5,000 known alkaloids. Of the many thousands of species producing them, perhaps a few hundred—ranging, as we have seen, from mushrooms to morning glories—are psychedelic or hallucinogenic. These mind-altering plants
have been used for thousands of years all over the world as intoxicants, for healing, and in magical and religious rites. The visionary and ecstatic states they induce are regarded as encounters with the divine, made possible by spirits incarnated in them. The drug taker achieves enlightenment, emotional purgation, or a sense of communion by passing beyond the limits of the self; the soul leaves the body, is transported to other levels of the universe, and comes into contact with their rulers: the protective or menacing spirits of animals, gods, demons, or ancestors. The power of the sacred plant can be put to use in many ways: to find lost objects, to discover the identity of a criminal, to see distant places and foretell the future, to fulfill desires by witchcraft and magic, to diagnose and cure disease, and especially to perform what we call psychotherapy.

In many cultures the power of the drugs is appropriated by or entrusted to certain people who are accredited with the capacity of manipulating it to help or harm others. They correspond in part to physicians in our culture and are called by names like shaman, witch doctor, medicine man, curandero, sorcerer, or, in more elaborately organized societies, doctor and priest. The healer or sorcerer sometimes takes the drug himself to incorporate the medicine power of the spirits it embodies, and sometimes supervises and guides the drug-induced voyage of a client or patient. The curative or magical rite may be performed individually or in groups; in some cases it develops into a sacred cult. Less often, the drugs are taken in solitude as part of a personal quest; they are also sometimes used for pleasure, especially (but not only) where Western influence has initiated some cultural and social disintegration. Men use the drugs much more than women, and they are usually prohibited to children. In their religious or ritual context, they tend to confirm the authority of the sacred symbols and beliefs of a culture; often the visions themselves are culturally stereotyped.1

The Old World

Partly for cultural reasons and partly, perhaps, because of the distribution of plant species, the number of psychedelic drugs used in the Eastern Hemisphere is restricted. Opium, cannabis, and alcohol have dominated Old World cultures; the first two are extensively cultivated, and the third, of course, can be produced by fermentation from any grain or fruit. They all have long and complex histories as medicines and religious intoxicants and in many of their manifestations resemble the drugs we have called psychedelic. In this way Indian holy men use hashish; Persian mystics, the Neoplatonist philosopher Plotinus, and the poet Coleridge took opium; and wine was drunk in the rites of Dionysus. Except for mild stimulants and sedatives (coffee, tea, betel, kava, rauwolfia root, and so on), the only other psychoactive plants in geographically widespread use are the Solanaceae with their alkaloids atropine and scopolamine; they have a variety of medical and magical applications on all the Old World continents. Australian aborigines, for example, chewed the leaves of a plant called pituri (Duboisia hopwoodii), containing scopolamine, until recently, when it was replaced by tobacco. Datura was once held
sacred in China, and in some parts of Asia it is still mixed with cannabis and smoked. Belladonna, mandrake, henbane, and datura have also been used, feared, and respected for thousands of years in the Near East and Europe, where a great deal of myth and legend surrounds the weird and terrifying intoxication they produce. Mandrake root is mentioned in the Bible as a cure for sterility; it was used in Greece, Egypt, Assyria, and Rome as magic, medicine, and poison; necromancers conjured demons with it, and oracles, possibly including the one at Delphi, took it to prophesy. It has even been suggested that the resurrection of Jesus was an illusion created with the help of mandrake, which is said to have been given to crucified men to make them appear dead so that they would be removed from the cross. Solanaceous drug magic reached a high point of cultural importance in Europe during the twelfth through seventeenth centuries, perhaps providing a basis for many of the famous witchcraft scandals. The folk tales that even today shape the European image of witches and were-creatures may be reminiscences of solanaceous intoxication: witches' brews, bodies rubbed with magic ointment, soaring broomstick rides, frenzied orgiastic dancing at witches' Sabbaths, transactions with evil spirits, and transformation into a wolf or bird (Harner 1973a; Harris 1974).

Another psychedelic plant of legendary significance is the fly agaric mushroom, *Amanita muscaria*. It grows in the high latitudes of the Northern Hemisphere, usually among the roots of birch trees, all over the world, but in recent times has been used as a drug only by certain tribes in far northwest and far northeast Siberia. The dried mushrooms have now been displaced by vodka, but they were once used as intoxicants as well as for divination and healing. The word "shaman," applied to any primitive healer who employs trance or spirit possession, is of Siberian origin, and the importance of this social role in Siberia may have had something to do with the mushroom's presence. But the possible role of the fly agaric in the origins of Indian religion is even more significant. R. Gordon Wasson has proved to many scholars' satisfaction that soma, the mysterious divine inebriants celebrated in the hymns of the Rig-Veda, the earliest literary monument of Hinduism, was *Amanita muscaria*. The Vedic descriptions exclude the possibility that soma was cannabis or an alcoholic drink: they refer to a plant without leaves, blossoms, or seeds, therefore a mushroom; they mention the fiery red color of the fly agaric; the plant is never said to be cultivated, and it is said to grow in the mountains but not the hot plains of the Indus valley (unlike cannabis); the preparation period of one day is too short for fermented liquors; most important, the hymns allude to an unusual property of fly agaric, the fact that the active alkaloid passes through the body largely unchanged and can be reused by drinking the urine of someone who has taken it. Of the 1,029 Vedic hymns, at least 120 are devoted to extolling and deifying this plant. The Aryans who invaded and conquered India from the northwest about 1600 B.C. and brought the Vedic religion with them had probably learned to use fly agaric in the mountains of the Hindu Kush, in Afghanistan; they abandoned it when the places where it grew became too hard to reach (Wasson 1968).
Despite accusations of a panmycological obsession by more conservative scholars, Wasson believes that mushroom intoxication is not only the source of the Vedic poets' inspiration and ultimately of Hindu religious doctrine but also a pervasive influence on Greek religion. He maintains that mushrooms and mushroom juice were the ambrosia and nectar of the Greek gods and the initiatory secret of the mystery cults. In a recent book, Wasson, Albert Hofmann, and a classical scholar, Carl A. P. Ruck, have made a special study of the Eleusinian mysteries. The rites at Eleusis, outside of Athens, were celebrated for nearly two thousand years, ending in the fifth century A.D.; they centered on the worship of the earth mother, Demeter, goddess of grain, and her daughter Persephone (or Kore), whose abduction by the underworld god Hades and yearly return symbolized the cycle of the agricultural seasons and the death and rebirth of all living beings. In the initiation hall, worshipers are thought to have seen apparitions, witnessed a pageant representing the Per-sephone story, or descended symbolically to the underworld; at the climax of the ceremony the high priest revealed the sacred objects in a blaze of brilliant light. It is not known what the sacred objects were, or just what the initiates saw, heard, and felt during that night; in ancient times the penalty for divulging this remarkably well-kept secret was death. The literature contains references to a ceremonial drink called the kykeon, a mixture of flour, water, and mint; and some ancient writers attribute particular ritual significance to a stalk of wheat or barley. Wasson and his colleagues believe that no mere theatrical pageant or priestly ritual could have produced the overwhelming emotional effects (and physical symptoms) attested to by the greatest men of antiquity, and they conclude that the flour in the kykeon contained lysergic acid alkaloids derived from grain infected with ergot (Wasson et al. 1978).

Wasson also finds mushroom influences in Near Eastern religion, including Judaism and Christianity; he regards the Tree of Knowledge and its forbidden fruit as a mythical representation of the birch tree and the fly agaric growing beneath it. In a book called *The Sacred Mushroom and the Cross*, the Biblical scholar John Allegro broadens these speculations even further by the use of etymological arguments to propose that Christianity originated as a hoax in which the rabbi Jesus was invested with the powers and names of the fly agaric, the true body of Christ. In effect, according to Allegro, Christianity was the exoteric disguise of a secret mushroom cult whose original content was eventually forgotten (Allegro 1970). His arguments are not considered plausible by either religious or secular Biblical scholars, but we mention them here for their interest and boldness.

The magical and religious use of solanaceous drugs in Europe and fly agaric in Asia is almost extinct, but ibogaine is still taken ritually in Africa. In addition to its secular use as a stimulant and aphrodisiac, it is the center of the ceremonies of the Bwiti cult among several tribes in Gabon and the Congo. Bwiti is a revivalist religion that combines elements of Roman Catholicism with traditional ancestor worship. The iboga root is taken in powdered form before the religious ceremonies to stay awake; once or twice in a lifetime, usually at the time of initiation, the cult member takes a large dose over a period of eight to twenty-four hours to talk to the gods or the ancestors. A relative guides the initiate through a visionary landscape past
obstacles down a road that takes him to the dwellings of the spirits of the dead. This pattern of a voyage appears again and again in descriptions of psychedelic drug experience, both primitive and modern; the phrase "drug trip" is no casual metaphor. The Bwiti ceremonial, like the peyote religion among North American Indians, is a crisis cult: an attempt to reestablish a basis for unity by means of syncretic religion in a culture that has undergone the disintegrating influence of Western civilization (Fernandez 1972).

A phenomenon that is relevant here, although it does not involve drug-taking, is the epidemics of the disease known as ergotism, contracted from ergot-infected rye, that punctuate the chronicles of medieval Europe. There are two kinds of ergotism, gangrenous and convulsive. They share certain mild early symptoms; the gangrenous variety (once called Saint Anthony's Fire) then continues with burning sensations in the limbs, gangrene, and sometimes death, while convulsive ergotism produces muscle cramps, spasmodic twitching, blisters, formication (the sensation of insects or worms in the skin), giddiness, delirium with hallucinations, and periodic seizures resembling epilepsy that may continue for nearly a month; it too sometimes ends in death. Ergotism began to disappear when its source was identified in the late seventeenth century and became almost extinct when other grains replaced rye as a staple crop, but as late as 1951 there was an outbreak of convulsive ergotism in a village in France. A recent paper in the journal Science maintained that the witchcraft accusations in Salem, Massachusetts, in 1690 were produced by ergotism, but this argument was promptly and apparently conclusively refuted by a later article in the same journal (Caporael 1976; Spanos and Gottlieb 1976).

Ergot has long been used as a medicine in the treatment of migraine and also to hasten childbirth by precipitating uterine contractions. In the twentieth century several alkaloids were isolated; medically, the most important are ergotamine, used in the form of ergotamine tartrate to treat migraine, and ergonovine, a uterine stimulant. Several semisynthetic derivatives of these alkaloids are also used in medicine. Patients taking ergotamine sometimes show the symptoms of incipient gangrenous ergotism; ergotamine also has some contractile effect on smooth muscle, including peripheral blood vessels and the uterus, but it is not psychoactive. The mixture of related alkaloids known as ergotoxines, first isolated in 1906, is a more powerful smooth muscle stimulant and more poisonous; possibly it causes most physical symptoms of convulsive ergotism and lysergic acid amides contribute the psychological symptoms (Barger 1931; Merhoff and Porter 1974).

The New World

The Western Hemisphere was the center of preindustrial psychedelic plant use; here over
ninety species were known, as compared with fewer than a dozen in the Eastern Hemisphere. It is not clear whether the reasons are botanical or cultural. The anthropologist Weston La Barre has postulated a “New World narcotic complex” (we would prefer the term “psychedelic complex”) based on the aboriginal hunter’s need to incorporate supernatual power by achieving a vision and obtaining an individual guardian spirit for help in the hunt or in war. The shaman who has been through the initiatory crisis himself and is trained to guide others serves as the keeper of the society’s traditions. Agricultural societies, La Barre points out, are less dependent on individual luck and prefer collective rituals to private ecstatic experiences; the paleolithic hunting life and its shamanistic religion persisted much longer in the New World (La Barre 1972). It is certainly true that hunting and gathering cultures are more likely to experiment with foodstuffs and therefore discover plant drugs, and it is also significant that the American Indians originally came from the same region as the Siberian tribes who used fly agaric and gave us the word “shaman.” But it is not clear why Americans (or Siberians) should have been so interested in psychedelic plants, as opposed to visionary experiences induced by other methods. Divination in an ecstatic or trance state by a medicine man is a common technique of medical and psychiatric diagnosis in primitive cultures all over the world; only in Mexico and South America is the trance commonly induced by drugs. Besides, even the sedentary agricultural societies of the Mayas and Aztecs did not abandon use of psychedelic plants, although their priests and physicians established new forms of social control. Until the arrival of Europeans, cannabis, opium, coffee, and tea were unavailable in the New World; perhaps the absence of these substances gave impetus to the exploration of other plants that are more difficult to cultivate or have more unpredictable and disturbing psychological effects. It should not be forgotten that cannabis, opium, coffee, and tea often served the Old World very much as magic mushrooms and vines served the New. Persian treatises on opium smoking sometimes resemble manuals for psychedelic drug trips; Zen masters drink tea to preserve clarity of mind in meditation; and Tantric practitioners in India use cannabis in their devotions.

One widely cultivated New World psychoactive plant is coca, which contains the alkaloid cocaine. Coca is mainly a medicine and general stimulant; it helps to induce visions only at nearly toxic doses or in unusual ceremonial circumstances. Nevertheless, it has a long history as a magical drug in South America. Shamans and witches in the Amazon basin and the central Andes were using it to induce trances long before the Incas consolidated their empire in 1000 A.D., and even today it plays an important part in the religious life of some tribes like the Kogi of Colombia. The Incas tried to reserve coca for the nobility and priesthood and for court orators and messengers, but after the Spanish conquest peasants began to use it on a large scale; it is now the daily drug of millions in Peru and Bolivia, combining many of the functions of coffee and aspirin, while its religious and magical use has declined (see Grinspoon and Bakalar 1977).

Another New World stimulant with the power to induce a trance is tobacco, especially the species Nicotiana tabacum and the much more powerful Nicotiana rusticum, called picieit by the Aztecs. Tobacco belongs to the family Solanaceae, and its active principle, nicotine, is
pharmacologically related to the belladonna alkaloids. It was widely cultivated, possibly as early as 5000 B.C., for chewing, snuffing, smoking, and drinking in both North and South America. This important pre-Columbian ritual intoxicant is still believed by many tribes to have sacred powers that can serve medicine men and sorcerers as a vehicle of ecstasy and religious quest. In at least one group, the Warao of the Orinoco Valley, it is the only psychoactive drug used and a central feature of the cultural symbolism. Among the Campa of eastern Peru, the word for shaman is derived from the word for tobacco, and a mixture of ayahuasca and tobacco is taken to see the future or diagnose disease (Wilbert 1972; Weiss 1973). Tobacco and pipes (the familiar peace pipe) were also among the sacred objects in the Plains Indian medicine bundles. It is worth noting that American Indians recognize tobacco's addictiveness and contrast it in this respect with other plant drugs they use; the severest cases of nicotine addiction in the world are certain Amazonian shamans.

The belladonna alkaloids, mostly in the form of a drink made from the leaves or powdered seeds, also play an important part in American Indian magic and medicine. Jimsonweed or stinkweed (*Datura stramonium* or *Datura inoxia*) was familiar in North America before the Europeans arrived; the name, a corruption of "Jamestown weed," is derived from an incident in which it was eaten by seventeenth-century English colonists at Jamestown, Virginia. The Aztecs used the drug *toloatzin* or *toloache* (*Datura inoxia*) in divination and prognosis; other tribes still use this and other datura species for sores and internal injuries, as a preparation for the hunt, in rain-dance rituals and puberty rites, and above all in witchcraft. California Indians personified *toloache* as a great shaman and used it in their vision quests for an animal spirit helper. It is still sold in Mexican markets as an aphrodisiac and medicine. A Spanish term for datura is *hierba del diablo*, the devil's weed; under this name it is used, along with other "power plants" like peyote and a psilocybin mushroom mixture, by the (probably fictitious—see De Mille 1976) Yaqui Indian sorcerer Juan Matus in Carlos Castañeda's popular series of books. European investigators were once inclined to identify any unknown drug said to produce visions or hallucinations as the familiar datura, and in the early twentieth century the lysergic acid amide *morning glory* *ololiuqui* was misidentified in this way.

Plants containing atropine and scopolamine are also in common use in South America, from Colombia (*Meystückodendron amnesianum*) to southern Chile (*Latua pubiflora*, known as "the sorcerer's tree"). Various species of *Datura* and *Brunfelsia*...
are known in the Amazon and the Andes as *chamico, chiric sanango, borrachero,*
and *maikoa*, among other names. Datura is often one constituent of the Amazonian drink *
ayahuasca*, and in coastal Peru it is sometimes added to the mescaline drink *
cimora*, made from the cactus *Trichocereus pachanoi*. The Jivaros of the Amazon use datura as well as the harmaline drink *
natema*; they regard datura as stronger, more dangerous, and more suitable as a preparation for war. It is taken for spirit voyages to encounter the supernatural, but is not used in healing because the effects are so uncontrollable that the shaman cannot retain his ties to this world while journeying in the other one (Harner 1968). Many South American datura species, unlike those of other regions, are trees; interestingly, these tree daturas are all, like coca, domesticated plants that are unknown in the wild.

The plants that we have called psychedelic in a narrower sense—those containing mescaline or indole derivatives—are used mainly in the Amazon and Mexico. In South America the most important substances are the snuff called *epéna, parica, cohoba*, and so on, which contains DMT and 5-MeO-DMT, and the drink called by names like *
ayahuasca, yagé*, and *
natema*, which is based on vines containing harmala alkaloids, sometimes strengthened with datura, tobacco, or plants containing DMT; a mescaline cactus is also used in Peru and Ecuador. In Mexico the major psychedelic drugs are peyote (mescaline), psilocybin mushrooms, and morning glories containing lysergic acid amides; there are also many plants with unidentified active principles, notably the mint *
Salvia divinorum*, called *
pi/pizintzintli* or *
hojas de la pastora*, and *
Heimia salicifolia*, called *
sinucuichi* (see Schultes and Hofmann 1973).
The snuff *cohoba*, derived from *Anadenanthera peregrina* or *Anadenanthera colubrina*, was the first psychedelic drug Europeans discovered in the New World; one of Columbus’ crewmen described its use on the island of Hispaniola in 1496. Psychedelic snuffs were also used in Mexico, but they disappeared, for reasons that are unclear, long before the European conquest (Furst 1974). The Incas too apparently used *Anadenanthera colubrina* seeds, not as a snuff but in the form of a drink they called *vilca* or *huillca*, after the Quechua word for “holy.” The culture of the Incas was largely wiped out; the aboriginal inhabitants of the West Indies were soon eliminated by massacre and disease, and their customs became extinct. European penetration of the South American interior lowlands has been slower and not quite so catastrophic; as attested by a series of travelers’ reports and anthropological investigations since the sixteenth century, use of many similar intoxicating snuffs containing DMT, 5-MeO-DMT, and other tryptamines survives there, mainly in the central and eastern Amazon basin. The snuff may be taken through Y-shaped tubes into both nostrils, or one man may blow it through a tube into another’s nose. Medicine men and sorcerers use it for the usual divinatory and healing purposes; for example, among the warlike Yanomamö or Waika, who live on the Brazil-Venezuela border, shamans use *epéna* (derived from *Virola* bark) to capture the *hekura*, tiny humanoid demons that are incorporated into the shaman’s body and employed to cause and cure disease or cast spells on enemies. Not only shamans, who comprise about half the adult male population, but Yanomamö men generally use *epéna* almost daily; they take it as a group in preparation for war parties or the hunt or even purely for the pleasure of intoxication. They also use *Virola* resin as an arrow poison and snuff the powder in funeral ceremonies. In other tribes, like the Tukanoans of the Rio Negro, the snuff (*parica*) is used only by the shaman to diagnose illness (see Holmstedt and Lindgren 1967; Seitz 1967; Wasson 1967).

The most widely used and extensively studied psychedelic plant drug of South America is *ayahuasca* or *yagé*; it is so important in northwest Amazon Indian life that some tribes cultivate the Banisteriopsis vine from which it is derived. In some regions it is believed to empower the user with
extrasensory perception, whence the name "telepathine"; for the active alkaloids. The war-like and headhunting Jivaros of Ecuador take the drink (they call it natema) at ritual feasts (Linzer 1970); it is also used to weaken an enemy in preparation for killing him by stealing a guardian spirit called an arutam soul. About a fourth of all Jivaro men are sorcerers or shamans; with natema and tobacco juice they call forth spirit helpers in the form of insects, birds, snakes, and jaguars to identify the enemy who has caused illness (de Rios 1973, pp. 1196-1200). Another tribe that uses ayahuasca (in the form of a drink made from Banisteriopsis bark and Psychotria viridis leaves—harmala alkaloids and DMT) is the Cashinahua of Peru. The men drink it every week or two in groups; they regard the drug trance as an adventure of the dream spirit, and they take advice from the figures they meet in the visions (Kensinger 1973). In speaking of the experience, they use a phrase translated into English as the familiar "have a good trip"—once again, the image of a voyage. The Tukanoans of Amazonian Colombia provide ayahuasca to adolescent boys for the initiatory ordeals in which they see the tribal gods and the creation of man and the universe (see also Reichel-Dolmatoff 1972).

Marlene Dobkin de Rios has studied ayahuasca in an urban region, the slums of Iquitos, Peru, near the headwaters of the Amazon. She classifies its uses as follows: (1) magic and religious ritual: to receive a protective spirit or divine guidance from the plant spirit; (2) divination: to learn the plans of an enemy, check on a spouse's faithfulness, and so on; (3) witchcraft: to cause harm to others or prevent harm caused by others' malice; (4) diagnosing and treating disease; (5) pleasure. The inhabitants of the slums go to folk Healers called empiricos who conduct group sessions in jungle clearings on the outskirts of the city; the participants take the drug and with the guidance of the healer are led to discover the supposed cause of their illnesses or the solution for their problems. For example, an alcoholic woman "sees" a young man bewitching her by putting a powder in her drink; the healer "returns the evil" to the man, who a month later quarrels with his parents and leaves home; the woman stops drinking. In another case the healer takes the drug and interprets a woman's troubling sexual attraction to an older man who is her lodger as bewitchment by him; she throws him out of her house. Or a man discovers in a vision that the reason his wife no longer wants to live with him is the evil magic of a potion administered by his mother-in-law. The procedures of the empirico are a kind of short-term psychotherapy; they relieve some of the daily stress of slum life by using the ideas of witchcraft to translate anxiety and suspicion, by manifesting them as specific fears and hatreds, into either a belief that resolves conflict or an action that removes the immediate disturbance. The drug is not a cure but a means to find the cause of the problem, in other words, to interpret the patient's condition in vivid symbols; the efficacy of the healer's advice and symbolic actions, like a psychotherapist's, depends on culturally conditioned expectations and on his own sensitivity and moral authority (de Rios 1972).
Another account of ayahuasca is F. Bruce Lamb's Wizard of the Upper Amazon (1971), the story of Manuel Córdova-Rios, a Brazilian captured by an Indian band in the early part of this century and trained by its chief to be his successor as a leader and medicine man. The care and reverence with which this tribe treats the drug (perhaps nostalgically idealized by Córdova-Rios) can be contrasted with the goings-on described in The Yage Letters, Williams Burroughs' and Allen Ginsberg's correspondence about their adventures in South America in the 1950s while searching for the visionary vine. Both books contain several good descriptions of ayahuasca effects. Córdova-Rios' tale portrays the almost culturally intact Amazon Indian life of a time when Western influence was just beginning to be felt through the rubber trade. Burroughs' sardonic commentary suggests how things have changed since, or at least how they appear to an irreverent modern sensibility schooled in the urban drug culture of the United States. On shamans, he has this to say: "The most inveterate drunk, liar, and loafer in the village is invariably the medicine man" (Burroughs and Ginsberg 1975, p. 17). In his introduction to Wizard of the Upper Amazon, Andrew Weil concurs with Burroughs about the difficulty of finding a skilled ayahuasca healer or guide today.

In northern coastal Peru folk healers called maestrosor curanderos use similar techniques with a mixture of the San Pedro cactus (containing mescaline) and datura or tobacco. The healing takes place during a nocturnal group ritual that involves chanting, purgative vomiting, and discussion of symptoms. The spirits in the cactus speak to the curandero and reveal the cause of illness. This technique may be three thousand years old; today the symbolism combines Roman Catholic with pre-Columbian elements. Many curanderos make use of modern medicine as well as the ancient wisdom, and some even modernize their interpretations; one has described his therapy to an anthropologist as opening a path to the unconscious mind (Sharon 1972).

The Indians of Mexico have always had the world's largest pharmacopoeia of psychoactive plants; they were used first by shamans and sorcerers and later, under the Aztec and Maya empires, by state-supported priestly hierarchies. The Spanish conquerors regarded most of these drugs as an incarnation of the devil; anathematized by the Catholic Church, prohibited by the authorities, and believed until recently to be extinct, the old magical and healing practices continued almost surreptitiously in remote rural areas, where the drug plants have been rediscovered and identified in the last forty years by a series of scholars among whom the names of Richard E. Schultes, Roger Heim, R. Gordon Wasson, and Albert Hofmann are prominent.

The remnants of pre-Columbian drug customs are best preserved by the Zapatec, Mazatec, and
Mixtec Indians who live in the mountains of Oaxaca in southwestern Mexico. It was there that in 1938 Schultes rediscovered the morning glory ololiuqui described by early Spanish chroniclers in their accounts of the Aztec priesthood and once misidentified as *Datura meteloides* (*Datura inoxia*); in 1959 Hofmann isolated lysergic acid amides from the seeds (Schultes 1972, pp. 17-22). For a long time the Spanish chroniclers' reports about sacred mushrooms were disregarded because scholars assumed that they were talking in a confused way about peyote or datura. But in 1936 an anthropologist discovered the Mazatec ceremonies and sent some specimens to an interested Mexican physician, who forwarded them to Schultes, a teacher of botany at Harvard and a student of peyote. Schultes was unable to identify the mushroom because of its damaged condition, but he immediately suggested the lineage from Aztec teonanacatl and after a visit to Mexico identified one of the species as a member of the genus *Panaeolus* (Schultes 1940). Wasson, a Wall Street banker, had been doing research with his wife on mushrooms for many years; they read Schultes' papers and also learned of the giant mushroom statues that had been found in Guatemala and El Salvador, dating from as long ago as 1000 s.c. In 1955, after several summers of searching in the hills of Oaxaca, Wasson actually managed to take part in a ceremony directed by the Mazatec curandera Maria Sabina. Heim, a French mycologist, identified the mushroom Wasson had eaten as *Psilocybe mexicana*, and Hofmann later isolated psilocin and psilocybin from Heim's laboratory cultures of this and other species found to be psychodelic.

The divine mushrooms had been known not only in Central America but in Yucatan long before the time of the Mayas (c. 900 A.D.) and in the Valley of Mexico among the Toltec and Nahua predecessors of the Aztecs. When the Aztecs arrived from the north (about 1300 A.D.), they dealt with the drug as the Incas had dealt with coca—by trying to restrict its use to priestly functionaries and the nobility. The divine mushrooms were eaten at religious ceremonies and royal banquets where war captives were sacrificed to propitiate the sun god. The most celebrated of these feasts was the coronation of Montezuma II in 1502; after the hearts of the captives were offered in sacrifice and their flesh eaten, the guests took teonanacatl and spoke to the gods. A mushroom banquet to which Montezuma periodically invited the chiefs of neighboring and subordinate tribes was called the Feast of Revelations, and subsidiary chieftains often paid tribute to the emperor in the form of magic mushrooms (de Rios 1973, pp. 1207-1211). Throughout the period when they were exalted by the Aztec state religion and condemned by the Spanish state religion, some of the common people continued to use teonanacatl and ololiuqui in the ancient ways, very much as ayahuasca is used in the Amazon. These traditions have survived in the hills of Oaxaca, often in a syncretic form; for example, ololiuqui, once a divinity venerated at secret shrines, is now sometimes called *semilla de la Virgen* (seed of the Virgin Mary), and mushrooms may be consecrated on the altar of a Catholic church before they are used in curing rites.
Peyote was never forgotten so completely as teonanacatl and ololiuqui. People in what is now the southwestern United States and northern Mexico had been taking the dried cactus tops as a stimulant, general medicine, and ceremonial medium at least as early as 100 n.c. and possibly thousands of years before that. Spanish chroniclers described the use of peyote by Aztec priests, who had it transported from the north to the Valley of Mexico for healing and religious rites. It was formally prohibited to Christians by the Inquisition in 1620. Nevertheless, its use persisted, not only among pureblooded Indians who retained pagan customs but also among Christian converts, who provided the hills where it grows with a special patron saint. The cactus remained 'in relative obscurity until, toward the end of the nineteenth century, a new peyote cult arose among the Plains Indians of the United States, and white men rediscovered it.

The Huichols of the Sierra Madre Occidental grant peyote an especially important place in their religious ritual and cultural symbolism. For four hundred years this small tribe of about 10,000 members, formerly hunters and now corn (maize) farmers, has preserved a complicated religious system that centers on a yearly 300-mile voyage north to the desert of San Luis Potosi in search of peyote. Small irregular bands undertake the pilgrimage in winter under the leadership of a *mara'akame* or shaman-priest; it is called a "peyote hunt" because the cactus is symbolically identified with the deer, a major source of sustenance in the Huichols' former hunting life. The ceremonial cycle with its intricate ritual and elaborate mythology revolves around finding and using peyote, deer's blood, and corn in the proper sequence; the deer represents the past, corn the present, and peyote a solitary, nonrational experience outside of time. The desert where the Huichols collect *hikuri* (peyote) is regarded as their sacred land of origin, and the voyage retraces the path of ancient mythical heroes, which is probably the actual migration route of their ancestors. The peyote journey is a return to paradise lost that recreates symbolically a time before men were separated from the gods, plants, animals, and one another. At the height of the ceremony all age, sex, and role distinctions are set aside in an ecstatic fusion with the spirits of deer, corn, and peyote; this communion reproduces that of the First Times and provides a temporary respite from the ordinary world of adult individuality, social roles, and moral obligations. Present agricultural life is reconciled symbolically with the memory of the hunter's paradise of old, and private pain is transformed into a shared social drama.

Peyote may be used by all Huichols, even children, at any time of year as a general stimulant and panacea; even when enough is taken to produce visions, the purpose is nothing more than pleasure except on special ceremonial occasions. Most peyote takers' visions are regarded as private, incommunicable experiences; only the mara'akame is required to interpret and convey to others the messages he receives from gods and ancestors. He uses this wisdom both as a shaman attending the sick and as a priestly master of public ceremonies.

Besides the legends linking peyote, deer, and maize, Huichol mythology includes an epic that
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Written by Lester Grinspoon

deals with *toloache* (*Datura inoxia*), personified as Kieri, the chief of *brujos* or sorcerers. This evil figure is conquered by the sacred deer with the help of peyote and in death becomes a plant that enchants and dominates sorcerers. The last section of the epic is a cautionary tale describing the dangers of abandoning gentle and benign peyote, the drug of shamanistic healing, for madness-inducing datura, whose black magic may make the user jump off a cliff in the belief that he can fly or put him into a sleep from which he will never awake. This myth may depict the replacement of an early datura cult by peyote (Furst and Myerhoff 1972).

Another American psychedelic drug ritual attempting a symbolic reconciliation between present and past is the peyote religion of the Plains Indians, which now has over 200,000 adherents, a large proportion of the Indian population of the United States and Canada. Modern peyotism is a reaction, intertribal and pan-Indian in form, to white domination and cultural disintegration; it is not directly modeled on older tribal customs or closely related to Mexican ceremonies centered on a shaman. Nevertheless, peyote may have had a predecessor among North American Indians: *Sophora secundiflora*, an evergreen shrub with a red seed known as the mescal bean. Mescal beans contain the alkaloid cytisine, which is related to nicotine; the importance of this substance is unclear, since it seems to be more poisonous than hallucinogenic. Archeological sites in Texas dated at 8000 B.C. show evidence of the use of mescal beans for decoration or intoxication. By the nineteenth century Wichitas, Omahas, Otos, and other Plains Indians were taking it in preparation for war and the hunt; it became the basis of a cult known as the Wichita Dance, Deer Dance, or Red Bean Society. The mescal bean was so toxic—half a bean would produce the desired visions and a whole bean might kill—that it was abandoned when peyote became better known; the last Red Bean ceremonies probably took place in the 1870s. Memories of the Red Bean cult persist in the symbols of modern peyotism as well as in the name of the chief derivative of the cactus: the road man or director of the peyote ritual often wears a mescal bean in his necklace.

In the generation after the Civil War, the Plains Indians were defeated and conquered by white settlers and the United States Army. They were deprived of the bison and the hunting life, confined to reservations often too barren for agriculture, dependent on government relief for food, ravaged by alcoholism and disease. Efforts at forced acculturation and assimilation followed: much of the chiefs' power was transferred to the Bureau of Indian Affairs, which bypassed their authority to provide relief directly to individual families; horse raids were prohibited; young men were sent off the reservations to boarding schools. Amid the disorganization and misery, old social roles had lost their meaning—especially the male status of hunter and warrior.

New religious movements that substituted collective rituals for the individual vision quest now sprang up to give these men a psychological and cultural home. The most popular of the revitalizing movements that promised to restore the old conditions by supernatural means was
the Ghost Dance, founded by Jack Wilson, a Paiute of Nevada, in 1872. Starting as a rite that fused Christian messianism with Indian religious ideas in an attempt to make the white man vanish and the buffalo reappear, it was misinterpreted by whites as an armed resistance movement. It was weakened by internal dissension and by the ineffectuality of its promises and crushed in the campaigns that ended at Wounded Knee in 1890. The peyote religion was in a sense an alternative to the Ghost Dance and therefore rose greatly in popularity when it failed. Peyotism preached resignation instead of resistance, accommodation to present realities rather than a return to paradise lost. Its rites and doctrines provided the participants with esthetic experience, ethical principles, personal goals, and social roles in a white-dominated society. Peyote was mistrusted by whites and believed by Indians to be a cure for alcoholism, tuberculosis, and other diseases and vices introduced by the white man; on the other hand, the Saturday night ceremony was designed to accommodate the modern work week and the Christian sabbath, and beginning in the 1890s it was often combined with such white religious practices as use of the Bible, sermons, baptism, and christening. By assimilating some of the symbols and values of the dominant culture while preserving an essential distinctiveness, peyotism has continued as a living religion among the Plains Indians.

Peyote began its spread into the southwestern United States at midcentury and by the early 1870s had reached the Comanches and Kiowas of the southern plains. There its use became detached from the old shamanistic practices and incorporated into the new religion, which borrowed some of the symbols of the Red Bean cult. It was disseminated quickly through intertribal contacts at government boarding schools and Carlisle University, with the help of railroads and the U.S. Mail. The many more or less independent founders of the cult and its missionary evangelists moving from tribe to tribe were usually men at home in neither Indian nor white society, often partly white by descent or with only a tenuous tribal identity: men like Quanah Parker, part Comanche, part white; Jonathan Koshiway, an Oto, who identified his version of the rite with Protestant Christianity; John Wilson, Caddo-Delaware-French, who participated in the Ghost Dance and after its failure founded his own cult with borrowings from Roman Catholicism. As the peyote rites proliferated, they faced opposition from established religious and political powers: the traditional tribal authorities and also state and federal governments. Adopting Christian practices, whether sincerely or as a stratagem, provided some protective cover; a more conscious defensive device was incorporating as a church. One peyotist group called the Red Bean Eaters changed its name to Union Church in 1909; Jonathan Koshiway chartered the Church of the First-Born in 1914; finally, in 1918, with the help of the anthropologist James Mooney, an intertribal group incorporated itself in Oklahoma as the Native American Church, and this organization eventually absorbed or replaced all its forerunners.

Since the turn of the century, peyote users have been subject to sporadic and usually ineffectual legal harassment instigated by traditional Indians, missionaries, and government bureaucrats. Between 1917 and 1937 most western states passed laws against peyote; nine bills banning it were introduced in Congress from 1916 to 1937; from 1917 to 1940 it could not
be sent through the mails; from 1923 to 1933 regulations to suppress the traffic were issued, apparently without legal authority, under the Volstead Act. In 1948, during a particularly obscurantist period in its treatment of drug issues, the American Medical Association urged a ban on peyote; and five anthropologists had to come to its defense in a letter in Science in 1951. But none of the bills introduced in Congress ever passed, and the Bureau of Indian Affairs had already stopped its attempts at suppression in 1934. The state laws were eventually repealed, modified, or declared unconstitutional as an invasion of religious freedom, and today none of them is in force. Tribes like the Navajo and the Taos Pueblo no longer resist peyotism on their reservations. The Drug Abuse Control Amendments of 1966, in outlawing psychedelic drugs at the federal level, made an explicit exception for Indian peyote use, and today only Native American Church members among all residents of the United States are legally permitted to possess and distribute the substance without the supervision of a physician in a federally approved research program.

As resistance faded, the peyote religion grew. By 1922 it had about 13,000 adherents, and peyote was a major source of income in the Mexican border town of Nuevo Laredo; by 1936 it had reached the Crees of Canada, over a thousand miles from the deserts where peyote grows; by 1955 the cult had been adopted in nearly a hundred tribes, and in 1958 the twelfth chartered state branch of the Native American Church was established. The church remains a loose federation without universally recognized leaders, defined lines of authority, or minutely prescribed doctrine and ritual; it hardly exists at the national level except as an instrument for dealing with the Bureau of Indian Affairs and lobbying Congress; yet it survives as the main organizational embodiment of the peyote religion. Although the degree of adherence to the principles of peyotism and attendance at its services vary as much as for any other religion, probably most adult Indians in the western United States and Canada have participated in at least one peyote ceremony.

The services take place on Saturday night once or twice a month under the direction of a road man or road chief, so called because he is the guide on the Peyote Road. The communicants gather around an altar fire, take peyote, and contemplate their visions as they listen to the beat of a drum that is passed around the circle of worshipers and the chants that accompany it. Toward dawn there may be public prayer and confession of sins, a baptism or curing rite, and a ceremonial breakfast; then everyone relaxes in a jovial afterglow until a feast held at noon. A power, sometimes identified with the Holy Spirit, is supposed to be incarnated in peyote and in the water and corn eaten at the ceremonial breakfast. Ethical preachings include abstinence from alcohol, brotherly love, and devotion to family and work; the participants humbly and solemnly submit to the &quot;teachings&quot; of peyote, which is believed to enlighten the heart and mind by heightening introspection and fortifying the conscience. Vomiting and the discomfort of sitting up all night are part of the purgative process; even an unpleasant visionary experience or bad trip is regarded as a valuable manifestation of evil provided by the same forces that drive it away. Although peyote is the symbolically central element, there is some overlay of Christianity, and many Indians combine peyote eating with membership in more
Although unbiased observers usually find that peyote eaters are not different from other Indians in most ways, adherents and opponents of the religion continue to make passionate and largely unsubstantiated assertions about its influence for good or evil. To its enemies, including many traditional Indians, peyote is a cause of laziness, mental illness, sexual immorality, and deformed children; to its friends it is a cure for most of the ills that flesh is heir to. In fact, Plains Indians use peyote in small doses for minor illnesses almost as we use aspirin (see Schultes 1938), and many conversions to peyotism are produced by a cure of some (presumably psychosomatic) physical illness. On the other hand, some observers believe that it eventually causes stomach trouble and other problems (Marriott and Rachlin 1971, p. 112). In any case, the more spectacular claims for peyote are spiritual; like many claims made for LSD, they involve changed hearts and reformed lives. A celebrated case is the Winnebago Indian Crashing Thunder, who told his life story to the anthropologist Paul Radin. A drunkard and murderer who had unsuccessfully tried to obtain a vision in accordance with the requirements of his tribe, he took peyote and saw "the only holy thing" he had ever experienced; he described himself as a changed man from that time on, no longer pitiable but happy (Radin 1970). It is often maintained that peyote can cure alcoholism (Pascarosa and Futterman 1976), and as often denied, even by defenders of the religion (La Barre 1964, p. 21). As with similar claims made for LSD, the evidence is unclear. Sometimes peyote visions in the social context of the confessional ritual seem to induce a conversion that transforms the life of an alcoholic, but if they did this reliably and consistently, alcohol would not be the problem that it is among American Indians. Nevertheless, it makes sense to try to find further ways of incorporating peyote into a treatment for alcoholism; fortunately, this is still legally possible for members of the Native American Church if not for anyone else. The United States Public Health Service Hospital in Clinton, Oklahoma, has reported some success in a program at its alcoholism rehabilitation center using peyote in group sessions that resemble Alcoholics Anonymous meetings (Albaugh and Anderson 1974).

Drug use in modern industrial society is often contrasted pejoratively with primitive and preindustrial drug use as haphazard, hedonistic, individualistic, psychologically disturbed and disturbing, and culturally disintegrative rather than unifying. There is some truth in this, but with closer study the resemblances become more striking than the differences. Every cultural pattern of psychedelic drug use found in Mexico and South America was reproduced in some form in the United States during the 1960s: shamanistic healing corresponds to the use of LSD by psychiatrists; cults like Bwiti and the peyote religion correspond to the psychedelic churches; an adolescent Indian seeking a vision is like a college student trying, in the accepted language, to find himself through drugs; the practices of Charles Manson and his followers are reminiscent of the use of drugs in witchcraft; the Yanomamö of Venezuela snuffing épéna at a festival are not so different from a group of hippies swallowing LSD at an outdoor rock concert; tribesmen taking a drug before going out to fight may be acting like Hell's Angels. Even the contrast between idiosyncratic and culturally stereotyped visions is questionable: the psychedelic
experiences described in accounts of American Indian life are often just as private and idiosyncratic as those that occur in contemporary industrial society, and in any case the psychedelic movement in the United States produced its own collective symbolism and sacred communal rites. The most important difference is that the psychedelic movement was at least apparently in conflict with the larger culture instead of confirming its authority. But American Indian life provides parallels for this, too, in the conflict between Mexican shamans and the Aztec priesthood or between traditional tribal authorities and the adherents of the peyote religion. And by now American culture has reconciled itself to psychedelic drugs in a backhanded way, as the Navajos reconciled themselves to peyote or the Aztecs to shamanistic drug use. The laws are only partly enforced, those who want to obtain the drugs usually can, and much less attention is devoted to their virtues and dangers or their social significance now than at the height of the cultural civil war in the 1960s. Along with what used to be called the underground or drug or counter culture, psychedelic drug use has been assimilated by liberal industrial societies as another more or less tolerated, more or less scorned minority diversion, custom, or ideology. But now we have to tell the story of the crises and compromises that made this possible.

1 The best survey of hallucinogenic plant use is Furst 1976.

2 A useful set of readings on this is Schleiffer 1973.

3 Wasson 1962 is a full annotated bibliography; see also Munn 1973, Metzner 1970, and the references in chapter 1 under Psilocybin.

4 This account is based on Myerhoff 1974. See also Furst 1972, Benitez 1975, and Cox 1977, pp. 32-51.

5 For further information on the mescal bean, see de Rios 1973, pp 1191-1193, and Furst 1976, pp. 7-9.

6 The literature on the peyote religion is extensive. Especially useful are Spindler 1952, Slotkin 1956, La Barre 1964, Aberle 1966, and Marriott and Bachlin 1971.