What are hallucinogenic plants? How do they affect mind and body? Who uses them - and why? This unique Golden Guide surveys the role of psychoactive plants in primitive and civilized societies from early times to the present. The first nontechnical guide to both the cultural significance and physiological effects of hallucinogens, HALLUCINOGENIC PLANTS will fascinate general readers and students of anthropology and history as well as botanists and other specialists. All of the wild and cultivated species considered are illustrated in brilliant full color. ISBN-0-307-24362-1
Hallucinogenic properties of Datura have been thoroughly exploited, particularly in the New World. In Mexico and the Southwest, Datura is used in the initiation ceremonies of adolescents. The Algonquin Indians gave an intoxicating medicine, wysoccan, to their young men, who then became violently deranged for 20 days. During this period, they lost all memory, starting manhood by forgetting they had been boys. The iboga root in Gabon and caapi in the Amazon are used in similar ceremonies. Datura has also been used in the religious practices of the ancient Egyptians, who incorporated it into their rituals to celebrate fertility and abundance. Datura was a prominent component of the Mayan triptych, which includes the sacred tree, the serpentine, and the flower, symbolizing the union of nature and spirituality. The hallucinogenic properties of Datura have been utilized for centuries, and it remains a significant cultural element in many societies today.
Hallucinogens are limited to a small number of types of chemical compounds. All hallucinogens found in plants are organic compounds—that is, they contain carbon as an essential part of their structure and were formed in the life processes of vegetable organisms. No inorganic plant constituents, such as minerals, are known to have hallucinogenic effects.

Hallucinogenic compounds may be divided conveniently into two broad groups: those that contain nitrogen in their structure and those that do not. Those with nitrogen are far more common. The most important of those lacking nitrogen are the active principles of marihuana, terpenophenolic compounds classed as dibenzopyrans and called cannabinols—in particular, tetrahydrocannabinols. The hallucinogenic compounds with nitrogen in their structure are alkaloids or related bases.

**ALKALOIDS**

are a diverse group of some 5,000 compounds with complex molecular structures. They contain nitrogen as well as carbon, oxygen, and hydrogen. All alkaloids are of plant origin, though some protoalkaloids occur in animals. All are slightly alkaline, hence their name. They are classified into series based on their structures. Many hallucinogenic alkaloids are indoles (see below) or are related to indoles, and the majority have or may have originated in the plant from the amino acid known as tryptophan. Most medicinal and toxic plants, as well as hallucinogenic plants, owe their biological activity to alkaloids. Examples of widely valued alkaloids are morphine, quinine, nicotine, strychnine, and caffeine.

**INDOLES**

are hallucinogenic alkaloids or related bases, all of them nitrogen-containing compounds. It is most surprising that of the many thousands of organic compounds that act on various parts of the body so few are hallucinogenic. The indole nucleus of the hallucinogens frequently appears in the form of tryptamine derivatives. It is composed of phenyl and pyrrol segments (see diagram following).

Tryptamines may be “simple”—that is, without substitutions—or they may have various “side chains” known as hydroxy (OH), methoxy (CH$_3$), or phosphoglyoxy (OPO$_3$H) groups in the phenyl ring. The indole ring (shown in red in the diagram) is evident not only in the numerous tryptamines (dimethyltryptamine, etc.) but also in the various ergoline alkaloids (ergine and others), in the ibogaine alkaloids, and in the ß-carboline alkaloids (harmine, harmaline, etc.). Lysergic acid diethylamide (LSD) has an indole nucleus. One reason for the significance of the indolic hallucinogens may be their structural similarity to the neurohumoral tryptamine serotonin (5-hydroxydimethyltryptamine), present in the nervous tissue of warm-blooded animals. Serotonin plays a major role in the biochemistry of the central nervous system. A study of the functioning of hallucinogenic tryptamine may experimentally help to explain the function of serotonin in the body.

A chemical relationship similar to that between indolic hallucinogens and serotonin exists between mescaline, an hallucinogenic phenylethylamine base in peyote, and the neurohormone norepinephrine. These chemical similarities between hallucinogenic compounds and neurohormones with roles in neurophysiology may help to explain hallucinogenic activity and even certain processes of the central nervous system. Other alkaloids—the isoquinolines, tropanes, quinolizidines, and isoxazoles—are more mildly hallucinogenic and may operate differently in the body.

**PSEUDOHALLUCINOGENS**

These are poisonous plant compounds that cause what might be called secondary hallucinations or pseudohallucinations. Though not true hallucinogenic agents, they so upset normal body functions that they induce a kind of delirium accompanied by what to all practical purposes are hallucinations. Some components of the essential oils—the aromatic elements responsible for the characteristic odors of plants—appear to act in this way. Components of nutmeg oil are an example. Many plants having such components are extremely dangerous to take internally, especially if ingested in doses high enough to induce hallucinations. Research has not yet shed much light on the kind of psychoactivity produced by such chemicals.
Pistillate flowers grow in the leaf axils. The intoxicating constituents are normally concentrated in a resin in the developing female flowers and adjacent leaves and

Cannabis is a rank, weedy annual that is extremely variable and may attain a height of 18 feet. Flourishing best in disturbed, nitrogen-rich soils near human

Cannabis is the source of hemp fiber, an edible fruit, an industrial oil, a medicine, and a narcotic. Despite its great age and its economic importance, the plant is still

widely spread weeds, having escaped cultivation, appearing as an adventitious plant everywhere, except in the polar regions and the wet, forested tropics.

MARIHUANA

, as a condiment and, like others of the 70 species in the genus, it is used in local folk medicine to bring boils to a head and to hasten the healing of burns and wounds. It

GALANGA

the head to induce visual hallucinations. Nothing is known of its chemical constitution. Of the 14 other species of Pancratium, mainly of Asia and Africa, many are known

ERERIBA

AGARA

Fly agaric mushroom is so called because of its age-old use in Europe as a fly killer. The mushrooms were left in an open dish. Flies attracted to and settling on them

derivatives. One of these is muscimole, the main pharmacologically active principle. Other compounds, such as muscazone, are found in lesser concentrations and may

The nature of the intoxication varies, but one or several mushrooms induce a condition marked usually by twitching, trembling, slight convulsions, numbness of the

early ideas of deity.

Amanita muscaria may be one of man's oldest hallucinogens. It has been suggested that perhaps its strange effects contributed to man's

Fly agaric mushrooms grow in the north temperate regions of both hemispheres. The Eurasian type has a beautiful deep orange to blood-red cap flecked with white

European philosophy, medicine, and even history for many years. Some played an extraordinarily vital religious role in the early Aryan cultures of northern India.

in the Western Hemisphere number more than 100!

species employed hallucinogenically than does the New World: compared with only 15 or 20 species used in the Eastern Hemisphere, the species used hallucinogenically

should there be such disparity? Has man in the Old World simply not discovered many of the native hallucinogenic plants? Are some of them too toxic in other ways to

properties than has man in the New World.

Banisteriopsis caapi or B. inebrians, several additives are often thrown in: leaves of Psychotria viridis or Banisteriopsis rusbyana, which themselves contain hallucinogenic

preparation to alter, increase, or lengthen the narcotic effects of the main ingredients. Thus, in making the ayahuasca, caapi, or yajé drinks, prepared basically from

PLANT ADDITIVES

Several methods may be used in the case of some hallucinogenic plants. Virola resin, for example, is licked unchanged, is usually prepared in snuff form, is

SNUFFING

way of using tobacco, smoking is now a widespread method of taking cannabis. Narcotics other than tobacco, such as tupa, may also be srnoked.

PLANTS MAY BE EATEN

Occasionally a plant derivative may be eaten, as with hasheesh. More frequently, a beverage may be drunk: ayahuasca, caapi, or yajé from the bark of a vine; the San

Pedro cactus; jurema wine; iboga; leaves of toloache; or crushed seeds from the Mexican morning glories. Originally peculiar to New World cultures, where it was one

Indian ayahuasca is used for a variety of medicinal and recreational purposes. Although much research remains to be done, ayahuasca is known to contain a number of

The role of hallucinogens in the cultural and social development of many areas of the Old World is only now being investigated. At every turn, its extent and depth are
The often-reported aphrodisiac properties of the drug have not been substantiated. 

Although the occasional vivid visual hallucinations may have sexual coloring, an hypnotic sense of rhythm. Although the occasional vivid visual hallucinations may have sexual coloring, a wonderful music, and aberrations of sound often entrance the mind; bizarre adventures to fill a century 

and well-being to fantastic dreams and visual and auditory hallucinations are reported. Beautiful sights, 

is true that its characteristics are not typically psychotomimetic. Everything from a mild sense of ease 

take place in a matter of minutes. 

and vary in narcotic effect. 

Taking place more rapidly in tropical than in cooler climates. Material from plants of different ages may 

of some of the constituents. Over a period of time, for example, the inactive cannabidiolic acid converts 

EFFECTS OF CANNABIS

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religious rituals, they indicate that 3,000 years ago, a sophisticated umbrella-shaped top, they long puzzled archaeologists. Now interpreted as a kind of icon connected with dating buck to 1000 B.C. Consisting of a stem with a human or animal face and surmounted by an umbrella made of mushroom stones (p. 60), excavated in large numbers from highland Maya sites in Guatemala and Mexico back to A.D. 300, have designs suggestive of mushrooms. Even more remarkable are the artifacts called mushroom goddesses, which were used as hallucinogens by the Aztec Indians, who called them teonanacotl, meaning "flesh of the gods" in the Nahuatl Indian language. These mushrooms, all of the family Agaricaceae, are still valued in Mexican magic or religious rites. They belong to four genera: Stropharia, known in North America, the West Indies, and Europe; Conocybe and Panaeolus, almost cosmopolitan in their range; Psilocybe, found in North and South America and the West Indies; and Gomphidius, known in Africa, Asia, and Oceania.

MUSHROOM WORSHIP

A variety of mushrooms, from species of Stropharia to species of Inocybe, have been extraordinary. These mushrooms are part of a family of the Gasteromycetes. The mushroom is an important component of many cultures, the botanical identities of many of the hallucinogens remained unknown until comparatively recent times. While known New World hallucinogens are numerous, studies are still uncovering species new to the list. In the New World—North, Central, and South America and the West Indies—the number and cultural importance of these hallucinogens have been extraordinary. At the same time, the use of New World plants. Many hallucinogenic preparations called for the addition of plant additives. Throughout the years, the extreme appreciation of their hallucinogens. Unexpected discoveries have come from studying the hallucinogenic powers of the mushrooms. The use of these fungi has been reported in many cultures, from the Aztecs to the Native Americans. In the New World, mushrooms are used in religious rituals, and in the Old World, they are used in traditional medicine.

No ethnological study of American Indians can be considered complete without an in-depth study of their hallucinogenic practices. As the use of these mushrooms and other hallucinogens became more widespread, the importance of hallucinogens reached amazing heights in the past—and in places their role is undiminished. In the New World, the use of hallucinogens in religious rituals and ceremonies is a common practice among many cultures. In Europe, the use of hallucinogens is more limited, but they still play a role in certain traditions, such as the use of tobacco and coca, the source of cocaine, have become of worldwide importance, none of the true hallucinogens are derived from plants. While hallucinogens can have powerful effects on the mind and body, their use can be dangerous and should be approached with caution. The use of these mushrooms and other hallucinogens is a complex and fascinating topic that continues to be studied by researchers around the world.

IBOGA

African hallucinogens have been used for thousands of years, and one of the most famous being the Bwiti cult. Entrance into the cult is conditional on having "seen" the god plant. The drug, discovered by Europeans toward the middle of the 19th century, is the root of Apocynaceae, known to be used as an hallucinogen. The plant is of growing importance, particularly in Mexico and South America, where it is used in religious rituals. The plant contains highly toxic alkaloids, the principal one being ibogaine. This hallucinogen is smoked with cannabis or tobacco in many parts of Africa and Asia. The plant contains a high level of ibogaine, which is a powerful hallucinogen. The drug is also the "sorcerers" of the Bwiti cult. Hunters use it to keep themselves awake during long hunting expeditions.

Datura

The plant contains highly toxic alkaloids, the principal one being scopolamine. This hallucinogen is smoked with cannabis or tobacco in many parts of Africa and Asia. The plant contains ibogaine, which is a powerful hallucinogen. The drug is also the "sorcerers" of the Bwiti cult. Hunters use it to keep themselves awake during long hunting expeditions.

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.load blessing for 11th century. Its use as an aphrodisiac in the East Indies has been identified with this species. And it is undoubtedly the plant that Avicenna, the Arabian physician, referred to in his works. The plant has a long history of use as an aphrodisiac in many cultures. In India, it has been used as an aphrodisiac for centuries. The plant is also found in the Himalayas and the Mediterranean regions. The use of this plant has been reported in many cultures, from the Aztecs to the Native Americans. In the New World, the use of hallucinogens in religious rituals and ceremonies is a common practice among many cultures. In Europe, the use of hallucinogens is more limited, but they still play a role in certain traditions, such as the use of tobacco and coca, the source of cocaine, have become of worldwide importance, none of the true hallucinogens are derived from plants. While hallucinogens can have powerful effects on the mind and body, their use can be dangerous and should be approached with caution. The use of these mushrooms and other hallucinogens is a complex and fascinating topic that continues to be studied by researchers around the world.
Psilocybin has been found also in European naturally occurring constituent of plant tissue. Some of the mushrooms also contain minute amounts of structure, a 4-substituted tryptamine with a phosphoric acid radical, a type never before known as a hydroxydimethyltryptamine - was isolated. This indole derivative, named psilocybin, is a new type of

The rush of interior pictures, mostly abstract motifs rapidly changing in shape and color, reached such an intensity, a night, seeing infinity in a grain of sand . . . (The visions may be of) almost anything . . . except the disembodied . . . your soul is free, loses all sense of time, alert as it never was before, living an eternity in space, a disembodied eye, invisible, incorporeal, seeing but not seen . . . he is the five senses dissolved. After about six hours, the dream came to an end . . . I felt my return to everyday reality to be a happy return from a strange, fantastic but quite really experienced world into an old and familiar home."

All your senses are similarly affected; the cigarette . . . smells as no cigarette before had ever smelled; it listeth, in time and space, accompanied by the shaman's singing . . . What you are seeing and . . . hilarity, and difficulty in concentration. The mushrooms cause both visual and auditory hallucinations.

The mushroom ceremony is as profound as that of any of the world's great religions. "The little mushroom comes of itself, no one knows whence, like the wind that comes we know not when . . . the mushroom springs up miraculously and that it may be sent from outer realms on thunderbolts. As one Indian put it poetically: 'nti-si-tho, meaning "worshipful object that springs forth." They believe that the mushroom springs up from pre-conquest times. The divine mushrooms are gathered during the new moon on the hillsides of the Mazatec Indians of northeastern Oaxaca illustrates the kind of mushroom ceremony.
A SNUFF-TAKING CEREMONY

The ceremony takes place in a large round house. Following initial chanting by a master of ceremony, the men and older boys form groups and blow huge amounts of snuff through long tubes into each other's nostrils (p. 74). They then begin to dance and to run wildly, shouting, brandishing weapons, and crawling across the floor in imitation of animals. The hakudufha obviously has a strong stimulating effect, absorbing the powder into each nostril successively. The sorcerer blows a little of the powder through a reed . . . into the air. Next, he snuffs, whilst, with the same reed, he is then finely powdered with the blade of a knife. Then the sediment is toasted in the pot over a slight fire and the sediment remains at the bottom of the pot. The medicine men of these tribes take the snuff exclusively by witch doctors and prepared from the bark of a beautiful tree, Elizabetha princeps. The snuff is then ready for use. The hakudufha is an intoxicating narcotic that must be imitated in the investigation of the chemistry of other narcotics. The laboratory, in this case, became an efficient substitute for nature. By providing suitable conditions, scientists have learned that must be imitated in the investigation of the chemistry of other narcotics. The laboratory, in this case, became an efficient substitute for nature. By providing suitable conditions, scientists have learned that must be imitated in the investigation of the chemistry of other narcotics.
The seeds of this tree are the source of a potent hallucinogenic snuff. The addition of lime or ashes to narcotic or stimulant preparations is a very widespread custom in both tropical and subtropical herbs and small shrubs. The mimosas belong to the subfamily Mimosoideae of the legume family, Leguminosae. The genus Mimosa, closely allied to Acacia and Anadenanthera, comprises some 500 species of tropical and subtropical herbs and small shrubs. The mimosas grow in the tropics and subtropics of both hemispheres. The 300 species of Justicia, members of the acanthus family, Acanthaceae, grow in the tropics and subtropics. There are many reports of the intoxicating effects of substances from Justicia in Amazonian Brazil. MASHA-HARI (Justicia pectoralis var. stenophylla) is a small herb cultivated by the Waiká Indians of the state of Amazonas. The addition of ashes to the powdered herb produces a stimulant taken for the treatment of the common cold. In other tribes of Pernambuco, the ash of the herb is mixed with the resin of Virola to produce a narcotic. A potent hallucinogenic substance may be prepared from the seeds of the yopo tree (Anadenanthera peregrina or Piptadenia peregrina) of South America. The addition of lime or ashes to narcotic or stimulant preparations is a very widespread custom in both tropical and subtropical herbs and small shrubs. The mimosas belong to the subfamily Mimosoideae of the legume family, Leguminosae. The genus Mimosa, closely allied to Acacia and Anadenanthera, comprises some 500 species of tropical and subtropical herbs and small shrubs. The mimosas grow in the tropics and subtropics of both hemispheres.
is yet to be unraveled. Some writers have even confused ayahuasca with completely different narcotic
Amazon region wrote about the drug. It is widely known in the Amazon but the whole story of this plant
In the years since Spruce's discovery, many explorers and travelers who passed through the western
material and also stems for chemical study. Interestingly, these stems were not analyzed until 1969, but
the dried stem for its effects instead of preparing a drink from the bark. Spruce collected flowering
as a new species. Spruce also reported that the Guahibos along the Orinoco River in Venezuela chewed
English explorer, had discovered the plant from which the intoxicating drink was made and described it
EARLIEST PUBLISHED REPORTS

Some 50 species of Erythrina, members of the bean family, Leguminosae, grow in the tropics and
been found in these seeds.

that of curare or arrow poisons, but no alkaloids known to possess hallucinogenic properties have yet
beans. An early Spanish explorer mentioned mescal beans as an article of trade in Texas in 1539. Mescal
Because the red bean drink was highly toxic, often resulting in death from overdoses, the arrival of a
peyote cactus (see p. 114) led the natives to
more spectacular and safer hallucinogen in the form of the peyote cactus (see p. 114) led the natives to

The mescal bean is a member of the bean family, Leguminosae. Sophora comprises about 50 species
asphyxiation through its depressive action on the diaphragm.
The alkaloid cytisine is present in the beans. It causes nausea, convulsions, and death from

beans have been found at sites dating before A.D. 1000, with one site dating back to 1500 B.C.
An early Spanish report, dated about 1571, states that Inca medicine men foretold the future by

The mescal bean plant is sometimes called by the same common name, colorin.
Because the red bean drink was highly toxic, often resulting in death from overdoses, the arrival of a
more spectacular and safer hallucinogen in the form of the peyote cactus (see p. 114) led the natives to

Colorines

Colorado Indian from Ecuador rasping the bark of Banisteriopsis -
A step in preparation of the narcotic ayahuasca drink

Previous

the yellow color of the bark

Next
The Yuru, orb ceremony in the Colombian Amazon involves ritual ayahuasca intoxication. The Indians are blowing sometimes with superstitious objects such as cemetery dust and powdered bones.

Often sold in native markets, are sliced like loaves of bread and then boiled in water for several hours, the Andes of Peru, Ecuador, and Bolivia. The natives, who also call it aguacolla, or giganton, recognize SAN PEDRO

alkaloids in Heimia salicifolia. They belong to the quinolizidine group. One, cryogenine or vertine, Presence of hallucinogenic principles was unknown in this family, but chemists have recently found six folk medicine. Only in Mexico, however, is the hallucinogenic use important.

various parts of Mexico. Other intoxicating sinicuichis are Erythrina, Rhynchosia, and Piscidia, but Heimia Sinicuichi is a name given also to other plants that are important both medically and as intoxicants in shrinkage of the world, and drowsiness or euphoria. Either deafness or auditory hallucinations may to ferment into a slightly intoxicating drink that causes giddiness, darkening of the surroundings, Mexico. Its leaves, slightly wilted, are crushed and soaked in water. The resulting juice is put in the sun which are shrubs. They are found in the mountains from Mexico to Chile, from the Mediterranean area include the sensation of flight. The weird effects are due possibly to an unidentified glycoside, but the ECUADOR. Shanshi is their name for the plant. The fruits are eaten for their intoxicating effects, which (Coriaria thymifolia) is a widespread Andean shrub long recognized as very poisonous to shrinkage. Its leaves are used medicinally for the treatment of a variety of conditions, and are believed to have hallucinogenic properties.

ANOTHER KIND OF CAAPI is prepared from Tetrapteris methistica, a forest vine also belonging to the family Malpighioceae. One group of Maku Indians of the northwesternmost part of the Brazilian Amazon prepares a cold-water drink from the bark. There is no other plant ingredient. The drink is very bitter and has an unusual yellow hue. This may be the "second kind" of caapi mentioned by several explorers. Although T. methystica produces effects identical with those of Banisteriopsis caapi, we still know nothing of its chemistry. However, it is closely related to Banisteriopsis and there is every probability that it contains the same alkaloids.

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The true reality. "seen" everything that underlies them. To them, everyday life is unreal, and what caapi brings them is animals. This experience convinces the Indians of the reality of their religious beliefs, because they have the intoxication of ayahuasca or caapi among these Indians is thought to represent a return to the ordeal that forms a part of the rite. Adolescent boys into manhood - the drug is given to fortify those who must undergo the severely painful drug is employed in deeply religious ceremonies that are rooted in tribal mythology. In the famous eastern Peru, medicine men take the drug to diagnose and treat diseases. In Colombia and Brazil, the of ayahuasca are of major importance in the lives of South American Indians. In CEREMONIAL USES additives may also alter the effects.

EFFECTS to person. In addition, preparation of the drink varies from one region to another, and various plant ceremony in some tribes. The intoxication ends with a deep sleep and dreams. Usually there are visual hallucinations in color. In excessive doses, the of drinking ayahuasca range from a pleasant intoxication with no hangover to violent reactions...
It considers peyote a sacrament through which God manifests Himself to man. America. It was legally organized, partly for protection against fierce Christian - missionary persecution, How the use of peyote diffused from Mexico north, far beyond the natural range of the cactus, is not fully asserted that visions are "not good" and lack religious significance. Peyote's reputation as a panacea and all-especially in those Indian cultures where the quest for visions has always been important, many natives with the individual. eating peyote, there are flashes and scintillations in colors, their depth and saturation defying description. Many legends about the supernatural powers of peyote underlie its religious importance. It might be to cure man's ills and woes; that peyote sings and talks as it grows; that when gathered it sings happily in constitutional guarantees separating church and state, however, a few states have enforced repressive resources of peyote—some as far north as Canada—can legally import mescal buttons by mail. Despite questioned or interfered with the practice since it is essentially a religious one. Those tribes living far from confines. Today it is so strongly anchored in native lore that even Christianized Indians believe that a USE OF PEYOTE BY THE AZTECS was described by Spanish chroniclers. One reported that those whoáníve written of its "wonderful properties." He took note of its small size and described it by saying that "it Dr. Hernández, the physician to the King of Spain, described the cactus as Peyotl zacatecensis and prophesy their future with 'satanic trickery.' " USE OF PEYOTE BY THE AZTECS was described by Spanish chroniclers. One reported that those whoáníve written of its "wonderful properties." He took note of its small size and described it by saying that "it Dr. Hernández, the physician to the King of Spain, described the cactus as Peyotl zacatecensis and prophesy their future with 'satanic trickery.' "
The cactus called hikuli mulato is believed to make the eyes so large and clear that the user can see sorcerers. This small "FALSE PEYOTES" of the same region and identified as tlitliltzin.

The ancient Aztecs. Ipomoea violacea was found 20 years later in ceremonial use among the Zapotecs of Oaxaca and identified as the ololiuqui of (p. 142), a known hallucinogen still used in Mexico. Not until 1939 were actual specimens of Rivea corymbosa used in Mazatec Indion divinatory rituals collected in Oaxaca and identified as the ololiuqui of Indian ancestors. Offerings were made to them because efforts of the Spanish to eradicate the use of morning glories had to wait for four centuries,

The seeds were venerated and placed in the idols of Indian ancestors. Offerings were made to them because efforts of the Spanish to eradicate the use of morning glories had to wait for four centuries, as well as affecting the motor nerves. Though the chemistry of these and other hallucinogens of Indian ancestors. Offerings were made to them because efforts of the Spanish to eradicate the use of morning glories had to wait for four centuries,

The nuns in silver dress fell into a deep chasm. Strange animal turns into a piece of wood in horizontal position. Nuns in silver dress fell into a deep chasm. Strange animal turns into a piece of wood in horizontal position.

The upper part of a man with a pale face and red cheeks, rising slowly from below. While I was watching, the nuns in silver dress fell into a deep chasm. Strange animal turns into a piece of wood in horizontal position. Nuns in silver dress fell into a deep chasm. Strange animal turns into a piece of wood in horizontal position.

The effects of most of the other constituents, alone or in combination, are not well understood. Psychological research has been done on mescaline, the alkaloid responsible for the colored visions, but is extremely interesting and is still subject to intense study by chemists.

The upper part of a man with a pale face and red cheeks, rising slowly from below. While I was watching, the nuns in silver dress fell into a deep chasm. Strange animal turns into a piece of wood in horizontal position. Nuns in silver dress fell into a deep chasm. Strange animal turns into a piece of wood in horizontal position.
Evidence has pointed to the use of several species of Brunfelsia either as the source of an hallucinogenic
by a medicine man who knows how to measure the doses properly. The natives employ the fresh fruits.
There is no cult or ritual surrounding its use, but the tree is widely feared and respected. Dosages are a
to cause delirium, hallucinations, and occasionally permanent insanity. ("sorcerers' tree") or latué (Latua
hallucinogenic principles.

The plant is not known in the wild and rarely, if ever, develops from seed. The Mazatecs plant this mint
leaves as a divinotory narcotic, Mazatec Indians of Oaxaca employ the leaves as a divinotory narcotic,

HALOCROMA

The sacred Mexican morning glory, Ipomoea violacea. The main hallucinogenic constituents of both seeds are ergine (d-lysergic acid diethylamide) and other ergoline alkaloids.

The plant and found several alkaloids closely related to that potently hallucinogenic synthetic compound. this announcement prompted chemists to examine the plant, but no

For centuries, the Mazatecs of Oaxaca have used the seeds in a mesonic, hallucinogenic practice as part of a vision quest. The plant is not known in the wild and rarely, if ever, develops from seed. The Mazatecs plant this mint
leaves as a divinotory narcotic, Mazatec Indians of Oaxaca employ the leaves as a divinotory narcotic,

HOOX COLEUS

Ingesting leaves of the plant has been found experimentally to induce an intoxication similar to that of

COLEUS

This determines the cause of his troubles. At this point the medicine man invites someone by his side who listens to what he says while

HOJAS DE LA PASTORA

Seeds of I. carnea, which are known to possess biodynamic constituents, are said to be used as

Ipomoea

explains why the natives use fewer of the Ipomoea seeds in preparing for their rituals. While these

Ipomoea violacea. The main hallucinogenic constituents of both seeds are ergine (d-lysergic acid diethylamide) and other ergoline alkaloids.

Many Horticultural Varieties

Of the Ipomoea violacea, including the popular ornaments Heavenly

Ipomoea

alkaloids are not uncommon in numerous morning glories around the world, apparently only in Mexico

Ipomoea

almost all Oaxacan villages, the seeds serve the

Ipomoea

are used for divination, prophecy, and diagnosis and

Ipomoea

seeds differs little from ancient practices. The seeds

Ipomoea

of the sacred Mexican morning glory

PRESENT USE

The modern ceremony, featuring the use of

Ipomoea

Indians "as an ever present help in time of trouble."
cases of disease diagnosis, divination, prophecy, or witchcraft. Datura. The chemical composition explains its great potency: 80 percent of the several typical tropane alkaloids of Datura include hyoscymine and atropine.

An infusion of the leaves is said to be more potent and dangerous to use than similar preparations of the root, and is sometimes called "tornaloco ("maddening plant"), indicating its potency as a narcotic. Aquilegia vulgaris is referred to it as "sister of ololiuqui," one of the morning glories (see p. 128). Its modern Mexican name, "chichipilli," designates it as the "acacia of the Indians." The Indians say it will reveal to them treasures preserved in ancient graves, or huacas, hence the local name "senorita." The coloquintidae, or "evil plant" of the second trip, is another variant.

Aboriginal peoples from Colombia to Chile value these trees as sources of ritualistic hallucinogens and divinatory barks. The seeds contain a number of minor, chemically related alkaloids that may be present: atropine, norscopolamine, meteloidine, and scopolamine, which are tropane alkaloids. Scopolamine is often the major constituent. In the highest Andes of Colombia, these minor alkaloids may be toxic in their own right. The differences among species are chiefly in the relative concentrations of these various alkaloids. Biologically monstrosities, their identification to species is often difficult. Most species are considered to be "varieties," perhaps incipient species. They may be the result of mutations induced by viruses.

Detection of the active compounds of these species has been delayed by the difficulty of culturing the plant. In the future, laboratories need to prepare cultures of the Daturas to test their potency. The identification of the active compounds is critical to the development of new therapeutic products. Some of the Indians in the Andes of southern Colombia cultivate a number of clones of highly "varied" species that induce dreams, gain occult powers, and predict the future. Yokuts use the drug in a spring ceremony to apprehend thieves, and prophesy the future. In the modern Tarahumares, they add the roots, seeds, and leaves to their maize beer. Zunis value the drug for its hallucinogenic effects. They use the seeds, leaves, and flowers in hallucinogenic preparations and are used as hallucinogens in both hemispheres. The drug is usually prepared by dropping pulverized seeds into fermented drinks or by steeping leaves and twigs in water. Use differs widely from tribe to tribe.

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Altered states of consciousness are frequently induced by the ingestion of certain plants. Such plants contain hallucinogenic properties and may be used during curing rituals, for amusement, or for other purposes. Though many hallucinogens are known, the chemistry and pharmacology of these substances are not as well understood as those of some other psychoactive drugs. Consequently, the total number of hallucinogenic species is difficult to determine. Complex and diverse families of plants have been used as hallucinogens worldwide for thousands of years. Hallucinogens and other psychoactive plants have been used in a wide variety of cultures as mood-altering agents. Hallucinogenic plants are found throughout the world, from the high Andes to the Amazon, from Siberia to the Sahara. These plants are found in all types of terrain, from high mountains to coastal plains.

Hallucinogens act directly on the central nervous system, but they may also affect other parts of the body. They have both physical and psychic activity. Their effects are usually short-lived, lasting only as long as the hallucinogen is present in the body. The duration of the effects can vary considerably, depending on the type of plant and the dose ingested.

Among the many species containing hallucinogenic properties are the belladonna plant (Atropa belladonna) and the henbane (Hyoscyamus niger). Scopolamine, an alkaloid of the belladonna plant, is a potent muscarinic antagonist that can produce a wide range of effects, including sedation, amnesia, and ataxia. However, it is not considered a hallucinogen because its main effects are more related to muscle relaxation and reduction of secretions.

Lobelia species (Lobelia inflata) are also known for their hallucinogenic properties. They are often used in traditional medicine for their antispasmodic and antidiarrheal effects. The alkaloid lobeline, found in these species, is thought to be responsible for their psychopharmacological effects, although the mechanism by which it causes hallucinations is not fully understood.

Other hallucinogenic plants include species of Salvia, such as Salvia divinorum, which is native to Mexico and has been used for centuries in traditional rituals. Its active ingredient, salvinorin A, is a potent agonist of the cannabinoid receptor and is responsible for its psychoactive effects.

Hallucinogens are often used in small doses as part of a larger ritual. They can also be used in various forms, such as powder, tea, or alcohol extract. The effects of hallucinogens can vary depending on the dose and the individual's sensitivity to the plant.

Overall, hallucinogenic plants play a significant role in traditional medicine and have been used for centuries in various cultures. Their psychopharmacological effects and potential therapeutic applications continue to be studied, and their role in modern medicine remains a topic of ongoing research.