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... He looked again at the fleshless face on the pillow and saw that it was smiling.

"The Light," came the hoarse whisper, "the Clear Light. It's here—
along with the pain, in spite of the pain."

"And where are you?" Susila asked.

"Over there, in the corner." Lakshmi tried to point, but the raised
hand faltered and fell back, inert, on the coverlet. "I can see myself
there. And she can see my body on the bed."

"Can she see the Light?"

"No. The Light's here, where my body is." ....

"She's drifted away again," said Susila. "Try to bring her back."

Dr. Robert slipped an arm under the emaciated body and lifted it
into a sitting posture. The head drooped sideways onto his shoulder.

"My little love," he kept whispering. "My little love..."

Her eyelids fluttered open for a moment. "Brighter," came the
barely audible whisper, "brighter." And a smile of happiness intense
almost to the point of elation transfigured her face.

Through his tears Dr. Robert smiled back at her. "So now you
can let go, my darling." He stroked her gray hair. "Now you can
let go. Let go," he insisted. "Let go of this poor old body. You don't
need it any more. Let it fall away from you. Leave it lying here
like a pile of worn-out clothes."

In the fleshless face the mouth had fallen cavernously open, and
suddenly the breathing became stertorous.

"My love, my little love..." Dr. Robert held her more closely.

"Let go now, let go. Leave it here, your old worn-out body, and go
on. Go on, my darling, go on into the Light, into the peace, into the
living peace of the Clear Light...

Sulis picked up one of the limp hands and kissed it, then turned...

"Time to go," she whispered...

Notes on the Present Status of
Ololiuhqui and the Other
Hallucinogens of Mexico *

R. GORDON WASSON

Picietl, peyotl, teonanacatl, and ololiuhqui—these were the four
great divinatory plants of Mexico at the time of the Conquest. We
give the names in Nahuatl, the lingua franca of that time, spoken as
a mother tongue by the Aztecs and many other peoples. By 'divinatory'
we mean plants that served in Middle American cultures as keys to
knowledge withheld from men in their normal minds, the keys to
Extra-sensory Perception, the Mediators (as the Indians believed)
between men and their gods. These plants were hallucinogens,
psychotropic agents, psychotomimetics, if we must use the nonce words of
contemporary science.

Among the remote monolingual peoples of Mexico these plants
continue to this day playing their divine role. Whenever the Indian
family is troubled by a grave problem, it is likely to turn to one or
the other of these plants and consult it according to the usage pre-
vailing in the region. There were other drugs, certainly, that belong
to the same class, and of these more will be said later. But if we may
rely on the number and quality of the witnesses, the importance that
they attribute to these plants, and the strangely moving episodes that
they tell us of the Indians' utter faith in and defense of them—then
these four were preëminent.

The civilization of Europe had known nothing like these novel
drugs of Mexico, at least not in recorded history. Similar miraculous

*This and the following article are reprinted, with slight corrections, from
Botanical Museum Leaflets, Harvard University, Vol. 20, No. 6, Nov. 22,
THE PSYCHEDELIC REVIEW

powers were attributed, in a way, to the Elements in the Mass; and
the Catholic Church in Mexico was quick to perceive this, to it,
alarming parallel. But belief in the divinity of the Sacrament called
for an act of faith, whereas the Mexican plants spoke for themselves.
In a number of situations the record is clear: the friars conceded the
miracles wrought by these agents but attributed them to the machina-
tions of the Evil One. Root and branch, the Church strove to ex-
tiripate what is called this superstition, this idolatry of the miracle-
working plants. The Church was unsuccessful; just how unsuccessful
can be seen from the fact that these plants are taken today,
throughout the Indian country, in ceremonials invoking the very
name of the Virgin Mary, of the Saints (especially St. Peter and
St. Paul), of Our Lord. The accessories to the rite are sold in
every market place, at a special stall, often in the shadow of the
parish church. The miracle-working plants pass from hand to hand
by private arrangement; they are never exposed like ordinary
produce. The rite takes place in midnight vigils, sometimes
accompanied by stirring age-old chants in the vernacular. The Indians
attending these rites may include prominent lay officials of the church;
rumor hath it that in certain places the priest is the leading curan
dero. Let it not be forgotten that the primary use of the sacred plants was
and continues to be religious—and by the same token medicinal.
Religion and medicine have not yet been separated out in many of
the Indian communities.

Picietl — Nicotiana rustica L.

The bright green powder of picietl leaves is familiar all over the
Indian country in Mexico. The curan
dero rubs it on the skin, over
the forearms, temples, stomach, legs. It is this that constitutes a
limpi
da or ritual cleansing. Formerly, when mixed with one part of
lime to ten of picietl, it was made into a wad that the Indian inserted
between teeth and gums and sucked, much as the Quechua sucks coca,
to give him strength. The friars inveighed against picietl with a
vehemence that is proof of its importance in the native culture. It is
still indispensable in the religious life of the Indians. Is it possible
that picietl has pharmacological properties not yet discovered by
science? May there be surprises for us in this plant?

Picietl is Nicotiana rustica L., a sister species to our ordinary
tobacco, Nicotiana Tabacum L. They both grow in Mexico. In
Nahuatl together they are yeetl, the former alone was picietl (now in
the vernacular pisiete), the latter alone was quauhyetl. Tobacco was
already widely diffused throughout the Americas at the time of the
Conquest. The Spaniards found it in the Antilles, the Portuguese in
Brazil, the English in Virginia. Along with the plant the Spaniards
took the name 'tobacco' from the Taino people of Hispaniola and
Cuba. Long since dead and gone, this Arawakan tribe bequeathed to
the world a legacy of important words that gives us an engaging
image of a blameless people: 'cane', 'hammock', 'tobacco', 'maize',
and 'potato', not to speak of a sixth, 'barbecue', that is in vogue today.
And so the Tainos, cultivating their maize and sweet potatoes, smoking
tobacco in their hammocks, paddling their canoes to the neighbor-
barbecue, were destined to be exterminated by the ferocious
Caribs and the Europeans.

The use of tobacco spread throughout the world with epidem-
ical speed. European explorers penetrating to lands far distant in Africa
and Asia sometimes found that tobacco had reached there before
them. Even the Church did nothing to combat it—outside of Mexico,
that is. The French abbé with his snuff box is a familiar figure in
Europe's cultural history.

Peyotl — Lophophora Williamsii (Lem.) Coult.

The history of peyotl, known to science as Lophophora
Williamsii (Lem.) Coulter, has been utterly different but equally
spectacular. A cactus, it is by that fact exclusively a New World
plant, native to the arid regions of northern Mexico—to Coahuila,
Zacatecas, San Luis Potosi, and Querétaro. Presumably the plant in
colonial times grew only in the north, but its use extended south as
far as the state of Oaxaca. Today the Indians of central and south-
ern Mexico seem to know it no longer. But the Indians of the north
still consume it in their religious ceremonies, and it is extending its
range, inching its way northward from tribe to tribe in the Plains
area until it has now finally reached Canada. In the same spirit of
blind misunderstanding that actuated the Church in colonial Mexico,
there are elements in the North American community that would
involve the police and courts to stop a practice that gives spiritual
salve to our surviving Indian population.

On a different cultural plane, peyotl made its bow in the great
world in 1888, when the toxicologist Louis Lewin of Berlin published
the first paper attempting to classify it botanically and describing its
sensational qualities. He was followed by Dr. S. Weir Mitchell
(1896) and Havelock Ellis (1897), men who commanded wide
attention in the English-speaking world. These papers served to
alert the scientific and learned world to a new order of vegetable product, and opened the sluice-gates to an astonishing flow of discussion and experimentation. Though a booster dose was hardly needed, Aldous Huxley gave the theme a new dimension when he published his The Doors of Perception in 1954 and Heaven and Hell in 1955.  

The bibliography on peyotl is enormous: one North American anthropologist, Weston La Barre, has devoted an important part of his professional life to keeping up with it and chronicling current developments. The question presents itself seriously whether the output of articles can be solely to the scientific interest of a strange drug, or whether supplementing this there is a subjective effect that compels those who have eaten the plant to embark upon a mission to make known what they have experienced.

Peyotl (which has commonly been eroded to ‘peyote’) is a Nahuatl word. Alonso de Molina in his Vocabulario (1571) gives its meaning as capullo de seda, o de gusano, ‘silk cocoon or caterpillar’s cocoon,’ which fits well the small woolly cactus that is its source. This is probably the explanation. Others cite a number of similar words in Nahuatl that invoke splendor or illumination. May these words not be secondary, having been born of the splendor of the visions that peyotl gives? For reasons that seem to have sprung from popular confusion, the English-speaking population of the Southwest came to call the dried peyotl ‘mescal buttons.’ Lewin, Mitchell, and Ellis, by their use of the term, fixed this grievous misnomer in the English language. Later, when the active agent came to be isolated, the chemists called the alkaloid ‘mescaline,’ thus compounding the mistake. ‘Mescal’ comes from the Spanish of Mexico mescal, derived in its turn from Nahuatl mescaili, the name for the agave, maguey, or century plant from which pulque is made, which, when distilled, yields mescal. Mescal has nothing to do with ‘mescal buttons’ or ‘mescalin’. This confusion is the lexicographers’ nightmare, as can be seen in many English-language dictionaries where erroneous citations are given under the respective meanings of the word.

On the other hand there is an important mejicismo that has largely escaped the lexicographers: piule, a generic name in Mexico for the hallucinogens. J. J. Santamaría traces it to Zapotec, in my opinion on insufficient grounds. I have heard it applied to hallucinogenic mushrooms among the Zapotec-speakers of the Sierra Costera, at San Augustín Loxicha: piule de barda, piule de cheris, these being distinct species of such mushrooms, or simply piule. Does it not stem from peyotl, thus: peyotl/peyût ➔ peyile ➔ piule? As Dr. Aguirre Beltrán has shown us, in early colonial times peyotl was in use in Oaxaca. The present-day currency of the word among some monolingual Zapotecs might come down from that period.

Teonanacatl — ‘God’s flesh’

At least twenty-five of our early sources, many of them among our most important, speak of teonanacatl, ‘God’s flesh,’ the sacred mushrooms of Middle America. Bernardino de Sahagún refers to them repeatedly and at some length. He gives in Nahuatl the text of his native informants. Of the Nahuatl poems preserved for us, one mentions them, and probably others refer to them metaphorically. There are miniatures of them in two of the early codices. We in the 20th Century would have expected the European in colonial Mexico to try them out, to satisfy his curiosity as to their properties. There is no record of any such experiment. The Spaniards (if we may judge by their words) at first rejected them with horror and loathing as an abomination, and in the ensuing centuries simply ignored them.

Such was this neglect that in 1915 William E. Safford, a North American economic botanist of established reputation, found it possible to read a major paper before a learned society, afterwards published in a respectable learned journal, denying that there had ever been sacred mushrooms in Mexico. Virtually no one challenged him. In a world indifferent to such matters, torn by warfare, his arguments were given by default. Only a single thin voice was raised in persistent protest, the voice of Dr. Blas Pablo Reko, a Mexican citizen born in Austria of Slavic family background, a tireless and enthusiastic field worker but one given to fanciful theories and so not taken seriously. He kept insisting not only that the mushrooms had existed but that the cult survived in places off the beaten track in Oaxaca.

Twenty years went by until, one day in 1936, Ing. Roberto J. Weitlaner got his hands on some of the sacred mushrooms in Huautla de Jiménez. He sent them to Reko, who forwarded them to Harvard, where they arrived in such a state that they could not be identified. On the record Ing. Weitlaner was the first white man in modern times to have seen the teonanacatl. Two years later, on July 16, 1938, his daughter Irmgard, with the young anthropologist who was destined to become her husband, Jean Bassett Johnson, together with two others, Bernard Bevan and Louise Lacaud, attended a mushroom rite in Huautla, in the home of José Dorantes. Johnson later gave
a full account of the event. So far as the sources go, they were the first white persons to attend such a ceremony.

One month later, in mid-August, the Harvard botanist Richard Evans Schultes, also in Huautla, received from native informants specimens of three species that they said were of the sacred class. He took them back to Cambridge. His field notes describe with unmistakable precision the species that was to be defined in 1956 by Roger Heim as Psilocybe caerulescens Murr. var. mexatecorum Heim. Dr. David Linder, Harvard mycologist, confirmed another as Panaeolus campanulatus L. var. sphinctrinus (Fr.) Bresad. Some time later the third species was identified at Harvard by Dr. Rolf Singer as Stropharia cubensis Earle, but he did not disclose his discovery, not even to Schultes, until many years later when it was too late to serve a purpose.

Then the Second World War supervened. Johnson was killed in North Africa in 1942. Reko died in 1953. Schultes' activities were diverted to other geographical regions. The outside world had been on the brink of discovering the Mexican mushrooms, but the war blanketed everything and the mushrooms slipped back into the well of the forgotten.

Meanwhile the matter was being approached from an altogether different angle in New York, by the Wassons, husband and wife, who had spent more than two decades gathering data on the role of mushrooms in primitive societies in Eurasia. This theme in ethnology, which we called ethnomycolony, had never before been explored in the West. Eurasia embraced so many cultures and so much history and literature that we had resolved early in our inquiries to stop with Eurasia and leave Africa and the Americas to others. Our Eurasian studies had led us to formulate a bold surmise: viz., that mushrooms had played a religious role in the lives of our remote ancestors, a role far more important than the world had supposed. We were still preoccupied with this idea when in September 1952, suddenly, we learned that a mushroom cult had been reported in 16th Century Mexico. On receipt of this, to us, sensational news, we resolved to embark upon a quest for surviving traces of that cult. At the time we knew nothing, absolutely nothing, about the cultures of Middle America. What awaited us in Mexico turned out to exceed our most sanguine anticipations, in the intellectual adventure of discovering for ourselves the rich Indian cultures of Middle America and in our rediscovery of the rite of the sacred mushroom.

In the beginning we discovered Ing. Roberto J. Weitlaner. With-
listed some 200 papers on work with these mushrooms that have already appeared in the past five years, in learned and scientific journals; not to speak of the hundreds of articles that have come out in a score of countries in the lay press. Here again there seem to be signs that those who have experienced the mushrooms feel a compulsion to impart to others the staggering effects of teonanacatl.

_Pipiltzintzinli — Salvia divinorum_ Epling & Jávito

Though teonanacatl has been rediscovered and identified, there still remain other plants classed with it in the colonial sources as possessed of divine (or Satanic) attributes that defeat our efforts at interpretation. Both Sahagún and Juan de Cárdenas refer to a plant that they call respectively _poyomati_ or _poyomate_, grouping it with other hallucinogens. Its identity is unknown. In his _Medicina y Magia_ Dr. Aguirre Beltrán cites other references to this plant in the unpublished records of the Inquisition. He likewise supplies numerous references to a second plant that belongs in the divinatory group, a plant the name of which is variously spelled in his sources but that he thinks in the original Nahuatl should be _pipiltzintzinli_. Its identity, too, is unknown. The plant grew in the area where _ololiuhqui_ flourished; but whereas _ololiuhqui_ is the seed of a morning glory, the seed of _pipiltzintzinli_ is never mentioned. It is called an _hierba_, never an _hiedra_ or _bejuco_ like the morning glory. There was a _macho_ and an _hembra_, or male and female varieties. It was cultivated.

All of these attributes fit the _hojas de la Pastora_ that the Mazatecs generally use as a divinatory plant. In September 1962 we gathered specimens of the _hojas de la Pastora_, and they were found to be a species new to science: Epling and Jávito named it _Salvia divinorum_. Among the Mazatecs I have seen only the leaves ground on the _metate_, strained, and made into an infusion. The colonial records speak of an infusion made from the roots, stems and flowers. But this is not incompatible with our information about _Salvia divinorum_: the Mazatecs may confine themselves to the leaves of a plant that has the divine virtue in all its parts. I suggest that tentatively we consider _pipiltzintzinli_, the divine plant of pre-Conquest Mexico, identical with the _Salvia divinorum_ now invoked in their religious supplications by the Mazatecs.

Of divinatory plants in use today that could have been used in Middle America before the Conquest, we have had experience with two: _toloache_, presumably the seeds of _Datura meteloides_ Dun., and _colorines_, the seeds of _Rhyhchosia pyramidalis_ (Lam.) Urb. Though

_Flowering Salvia divinorum E. & J., 'hojas de la Pastora', held by Irmgard Weitlaner Johnson. 1962. Photo by Wasson_
I know of no references to colorines in colonial sources, I think that they are present in the famous Tepantitla fresco where strings of seeds and mushrooms are falling from the hand of Tlacolochtli, and where some of the seeds are red and black, with the hilum distinctly placed in the red field. On the slopes of Popocatepetl the sacred mushrooms are still taken with colorines. It is vital that the hilum be in the red field; if it is in the black patch, it is the toxic seed of Abrus precatorius L., also called colorines and much used for beads by the Veracruzanos.

Ololinhqui — Rivea corymbosa (L.) Hall. fil.*

Note by R. E. Schultes:

*There have recently been suggestions that the correct name of ololinhqui is Turbina corymbosa (L.) Raf.

These suggestions arise from two articles which have appeared in the past several years: Roberty, G.—"Genera Convolvulacearum" in Candollea 14 (1952) 11-60; Wilson, K. A.—"The genera of Convolvulaceae in the southeastern United States" in Journ. Arn. Arb. 41 (1960) 298-317.

Roberty separates Ipomoea, Rivea and Turbina, putting the three into different subfamilies. He keeps in Rivea only one species of India and Ceylon. In Turbina, he has three species: T. corymbosa (which he states occurs in tropical America, the Canary Islands and the Philippines) and two other species of Mexico.

Wilson, in a key to the genera of Convolvulaceae in the southeastern states, separates out Turbina as a genus distinct from Ipomoea. While Turbina is keyed out as a distinct genus, there is no technical consideration of it in the body of the paper which follows the key. One must assume, consequently, that Turbina (as conceived by Wilson) does not occur in southeastern United States. There is, furthermore, no reference to the binomial Turbina corymbosa as such. Wilson pointed out that: "Generic lines are difficult to draw in this family, and treatments vary with different authors depending upon the emphasis placed on the taxonomic characters used ...".

The question of whether to use the binomial Rivea corymbosa, or to assign the concept to Ipomoea on the one hand or Turbina on the other, is, in effect, one of personal evaluation, by botanists, of the importance of characters.

When I first discussed ololinhqui in 1941 (Schultes, R. E.: "A contribution to our knowledge of Rivea corymbosa, the narcotic olo-linhqui of the Aztecs"), I looked into the problem of the generic position of the concept. I decided that, if indeed one were justified in separating this concept from Ipomoea, it must be accommodated in Rivea. The outstanding Argentine specialist on the Convolvulaceae, the late Dr. Carlos O'Donnell, who was spending a year at Harvard University at that time, worked with me closely in this study and was in complete agreement. I have studied this problem again in connection with Wasson's recent work and see no reason to change my opinion. Furthermore, it is clear that such an authority as the late Professor E. D. Merrill referred this concept to Rivea, placing Turbina in synonymy under Rivea and T. corymbosa in synonymy under R. corymbosa.

In view of the fact that such authorities as O'Donnell and Merrill elected to use Rivea corymbosa; that Wilson acknowledges that "the entire family is in need of intensive study and . . . all characters must be thoroughly re-evaluated"; that Roberty's article is hardly conservative and actually adds little to our basic knowledge of the family; and that the ethno-botanical and chemical literature has accepted Rivea corymbosa—in view of all these circumstances perhaps we might well continue to use the best known name until a really comprehensive study by a recognized specialist indicates that it is wrong.


Turbina corymbosa (L.) Rafinesque Fl. Tellur. 4 (1838) 81.

The least known in the outside world of our quartet of major Mexican divinatory agents is olo-linhqui; yet it is perhaps the best known and most widely used among the Indians of that country. In the race for world attention olo-linhqui has been a slow starter. Beyond the confines of the Sierra Madre few except specialists have heard of it, and the bibliography on it is short. But its properties are as sensational as those of teonanachtli and peyotl. Its identity was settled in 1941. The enigma of its chemistry was resolved in 1947 when, on August 18 of that year, Dr. Albert Hofmann read his paper in Australia before an audience of scientists, many of whom

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The Present Status of Olo-linhqui and Hallucinogens of Mexico*

*Although the spelling olo-linhqui has gained wide acceptance and is now the commonest orthography, linguistic evidence indicates that this Nahua word is correctly written olo-linhqui.
were plainly incredulous, so astonishing were his findings.\textsuperscript{22} In the following article he himself rounds out and completes his discoveries, and I shall not anticipate them here.

*Ololiuhqui* in Nahuatl is the name of the seeds, not of the plant that yields the seeds. The word means ‘round thing’, and the seeds are small, brown, and oval. The plant itself is a climber, called appropriately *coaxihuitl*, ‘snake-plant’, in Nahuatl, and *hiedra* or *bejucos* by the Spanish writers. It is a morning glory, and it grows easily and abundantly in the mountains of southern Mexico. Unlike *teonanacatl*, it bears seed over months, and the seed can be kept indefinitely and carried far and wide to regions where the plant itself does not grow. In Spanish it is commonly known as *semilla de la Virgen*, and in the various Indian languages there are names for it that should be carefully assembled by teams of linguists and then studied for their meanings and associations. In Oaxaca, only among the Trique of Copala have I found no familiarity with it.

Past experience has shown that for a divinatory plant to enlist the attention of the outside world two steps are usually necessary. First, it should be correctly and securely identified. Second, its chemistry should be convincingly worked out. Richard Evans Schultes settled the identity of *ololiuhqui* in the definitive paper published in 1941.\textsuperscript{23} It is the seed of a species of *Convolulaceae*: *Rivea corymbosa* (L.) Hall. fil. Schultes was not the first to link *ololiuhqui* with this family, but for decades there had been disputes over its identity, and since Schultes published his paper there has been none. The starting point for any student of the subject is Schultes’ paper.

It is not my intention here to tell over again the story told by Schultes. I will only supplement what he had to say with this observation. In the writers of the colonial period *olo-liuhqui* receives frequent mention, especially in the *Tratado* of Hernando Ruiz de Alarcón. Throughout these references there runs a note of sombre poignancy as we see two cultures in a duel to death—on the one hand, the fanaticism of sincere Churchmen, hotly pursuing with the support of the harsh secular arm what they considered a superstition and an idolatry; on the other, the tenacity and wiles of the Indians defending their cherished *olo-liuhqui*. The Indians appear to have won out. Today in almost all the villages of Oaxaca one finds the seeds still serving the natives as an ever present help in time of trouble.

**The Present Status of Ololiuhqui and Hallucinogens of Mexico**

*Titililtzin—Ipomoea violacea L.*

Since the appearance of the Schultes paper in 1941, and apart from the chemical findings of Dr. Hofmann, there has been only one important contribution to our knowledge of the morning glory seeds. In 1960 Don Tomás MacDougall published his discovery that in various parts of Oaxaca, especially in the Zapotec area, another seed is used exactly as *ololiuhqui* is.\textsuperscript{24} This is the seed of a second morning glory, *Ipomoea violacea* L. In Zapotec *olo-liuhqui* is known currently as *badoh*; the second seed is *badoh negro* or *badungas*, the full Zapotec equivalent of *badoh negro*. The black seeds are long and somewhat angular. In Nahuatl they could hardly be called *o-lo-liuhqui*, since this terms means the ‘round things’ or ‘pellets’.

The Nahua must have known them: what then did they call them? We believe the answer is to be found in Pedro Ponce’s *Breve Relación de los Dioses y Ritos de la Gentilidad*, Par. 46, where he speaks of *o-lo-liuhqui*, *peyote*, and *titililtzin*, all with the same magic properties. The third, possibly a hapax in the corpus of surviving classic Nahua documentation, is clearly not *o-lo-liuhqui*, since both are mentioned in the same sentence as distinct products. The word comes from the Nahua root meaning ‘black’, with a reverential suffix. May we not assume that this was the name current in classic Nahua for the black seeds that Don Tomás found in wide use among the Zapotecos in the 1950’s? Apparently there is a further reference to *badoh negro* in the records of the Inquisition: a Negro slave who was also a *curandero* used the term *o-lo-liuhqui del moreno*, which Dr. Aguirre Beltrán thinks was his way of saying ‘black *o-lo-liuhqui*’. But since this Negro was obviously a stranger both to Nahua and to Spanish, little can be deduced from his terminology.\textsuperscript{25}

According to Don Tomás, in San Bartolo Yauatepec, a village of the Sierra Costera, only the black seed is used, but in many villages

\textbf{Note by R. E. Schultes:}

\textsuperscript{*}Taxonomically, the genus *Ipomoea* is extremely difficult. The binomial *Ipomoea tricolor* has already crept into the limited literature that has grown up in connection with this second kind of ololiuqui. Inasmuch as some confusion may result in the use of two names—*Ipomoea tricolor* and *I. violacea*—we should point out that, after a study of plant material and the taxonomic history of these binomials, I am in agreement with the American specialist in the Convolulaceae, H. D. House (House, H. D.: “The North American species of the genus *Ipomoea*” in Ann. N.Y. Acad. Sci. 118 [1968] 259), that both names actually refer to one polymorphic species. In this case, then, the older name is *Ipomoea violacea* L. Sp. Pl. (1753) 161, which should be used in preference to its synonym *I. tricolor* Cav. Ic. Pl. Rar. 3 (1794) 5, t. 208.
both kinds are known. The black is widely regarded as the more potent. In some places the black seed is called *macho*, 'male', and the men take it; the *Rivea* seed, known as *hembra*, 'female', is for the women. The dose is often seven or a multiple thereof—seven, or 14, or 21; or the seeds are measured in the cup of the hand; or, as one informant in the Sierra Mazateca told me, one takes a beer-cap full of *Rivea* seed.

Capsule and seed of *Ipomoea violacea*, enlarged two and one half times.

In recent years a number of experimenters have taken the *Rivea* seeds with no effects, and this has led one of them to suggest that the reputation of ololiuhqui is due wholly to auto-suggestion. These negative results may be explained by inadequate preparation. The Indians grind the seeds on the *metate* (grinding stone) until they are reduced to flour. Then the flour is soaked in cold water, and after a short time the liquor is passed through a cloth strainer and drunk. If taken whole, the seeds give no result, or even if they are cracked. They must be ground to flour and then the flour soaked briefly in water. Perhaps those who took the seeds without results did not grind them, or did not grind them fine enough, and did not soak the resulting flour. The chemistry of the seeds seems not to vary from region to region, and seeds grown in the Antilles and in Europe are as potent as those grown in Oaxaca. I have taken the black seeds twice in my home in New York, and their potency is undeniable.
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Don Tomás MacDougall and his colleague Francisco Ortega of Tehuantepec, both old and excellent friends of Ing. Weitlaner, have given us permission to use their notes and photographs for this article. We publish for the first time a map showing the villages in Oaxaca where they have found the Ipomoea seeds in use, a group of seven Zapotec villages visited by Don Tomás, and also six villages in the Chatino country visited at my express request by 'Chico' Ortega in 1962, since we had a suspicion that the black seed was used in that linguistic area. The area of diffusion is certainly far wider than these villages, but this is a start.

The black seeds are called variously in the Zapotec country: badoh negro seems to be the prevalent name. But in the Zapotec dialect spoken in San Bartolo Yautépec they are called la'aja shnash, 'seed of the Virgin'. In this town Francisco Jiménez ('Chico Bartolo') took a series of photographs in the course of a routine vigil. A relative of his, Paula Jiménez, is a curandera, and she officiated, and also dictated an account of the steps taken in the rite. We give a paraphrase of what she said.

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IPOMOEA violacea Linnaeus

Drawn approximately one-half natural size.

Drawn by Elmer W. Smith
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First, the person who is to take the seeds must solemnly commit himself to take them, and to go out and cut the branch, and with the seed. There must also be a vow to the Virgin in favor of the sick person, so that the seed will take effect with him. If there is no such vow, there will be no effect. The sick person must seek out a child of seven or eight years, a little girl if the patient is a man, a little boy if the patient is a woman. The child should be freshly bathed and in clean clothes, all fresh and clean. The seed is then measured out, the amount that fills the cup of the hand, or about a thimbleful. The time should be Friday, but at night, about eight or nine o'clock, and there must be no noise, no noise at all. As for grinding the seed, in the beginning you say, 'In the name of God and of the Virgencita, be gracious and grant the remedy, and tell us, Virgencita, what is wrong with the patient. Our hopes are in thee.' To strain the ground seed, you should use a clean cloth—a new cloth, if possible. When giving the drink to the patient, you must say three Pater Nosters and three Ave Marias. A child must carry the bowl in his hands, along with a censer. After having drunk the liquor, the patient lies down. The bowl with the censer is placed underneath, at the head of the bed. The child must remain with the other person, waiting to take care of the patient and to bear what he will say. If there is improvement, then the patient does not get up; he remains in bed. If there is no improvement, the patient gets up and lies down again in front of the altar. He stays there a while, and then rises and goes to bed again, and he should not talk until the next day. And so everything is revealed. You are told whether the trouble is an act of malice or whether it is illness.

The photographs illustrate the curandera’s account of a ceremony invoking the divine power of the morning glory seeds. A feature of this recital is the child who serves the beverage. He (or she) is ritually cleansed, a symbol of purity. I encountered this practice for the first time in 1960, in the Mixteca, in the Valley of Juxtlahuaca, when Robert Ravicz and I were looking for survivals of the mushroom cult. The mushrooms were to be gathered by a virgin, they were ground on the metate by a virgin. In 1962, in Ayautla and also in San José Tenango, in the Sierra Mazateca, again a maiden ground the leaves of the Salvia divinorum. Here then is a general pattern, whether in the Sierra Mazateca, or among the Mixtecs of the Valley of Juxtlahuaca, or among the Zapotecas of San Bartolo Yautepex, for the preparation of the divinatory agent, either the seeds of the morning glory or the mushrooms or the hojas de la Pastora. (Had we been warned in advance to look for this, perhaps we should have discovered the same custom in other regions visited in

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years previous to 1960.) Suddenly it dawns on us that a deep-seated harmony exists between the role of the child in preparing the divine agent and the names circulating throughout the Nahuatl area for the sacred mushrooms themselves: we have found them called los niños, 'the children', and los hombrecitos y las mujercitas, 'the little men and the little women', and los señoritos, 'the lordlings'. Marina Rosas, curandera of San Pedro Nexapa, on the slopes of Popocatepetl, called the sacred mushrooms in Nahuatl apípitein, 'the noble princes of the waters', a singularly appropriate name, in which the prefix 'a' conveys the sense of 'water'. And here we revert to the miraculous plant that we think is the Salvia divinorum, called (as we believe) in Nahuatl pipiltzinintli, in the records of the Inquisition dating from 1700. This is obviously related to the name for the sacred mushrooms used by Marina Rosas. Dr. Aguirre Beltrán translates it as 'the most noble Prince' and relates it to Piltsintli, the young god of the tender corn. In the accounts of the visions that the Indians see after they consume the sacred food—whether seeds or mushrooms or plant—there frequently figure hombrecitos, 'little men', mujercitas, 'little women', duendes, 'supernatural dwarfs'. Beginning with our maiden at her metate, here is a fascinating complex of associations that calls for further study and elaboration. For example, are these Noble Children related perchance to the Holy Child of Atocha, which gained an astonishing place in the hearts of the Indians of Middle America? Did they seize on this Catholic image and make it a charismatic icon because it expressed for them, in the new Christian religion, a theme that was already familiar to them in their own supernatural beliefs?

The tradition of the doncella at the metate is of venerable age. Jacinto de la Serna, writing his Manual para Ministros toward the middle of the 17th Century, said in his Chap. XV:3 about ollolitqui and peyote:

como para algunas medicinas es menester molerlo, dicen que para que haga éste efecto a de ser molido por mano de doncella.

Nor is this citation unique. An Indian afflicted in his nether limbs was told to take pipiltzinintli.29

que la había de beber molida por una doncella, dándose en agua tibia, en ayunas, habiendo confesado y comulgado antes de tomarla y ayunado viernes y sábado y el día siguiente beberlo en el nombre de la Santísima Trinidad y de la Virgen de Guadalupe y de San Cayetano . . . y que el aposento había de estar muy abrigado, sin luz, ni aire,
ni ruido, y que no se había de dormir, sino estar en silencio aguardando a ver dichas figuras (un viejito vestido de blanco y unos muchachos pequeños vestidos del mismo color) que ellas lo ungieran y desencañarian si tenía remedio su mal o no.

What an extraordinary recapitulation of the salient features of the divinatory ritual as practiced in Middle America! There is the interweaving of Christian elements and pagan. There is the maiden grinding the divine element, and the preparation of the suppliant, confessing and communicating before he consults the Mediator. There is the sheltered spot—protected from sound and light. There is the consultation on an empty stomach. There is the clear intimation as to what one sees: a little old man clothed in white and little boys garbed in the same. Finally there is the august pronouncement whether the affliction of the suppliant can or cannot be remedied. All these features are always present, regardless of the divinatory plant that is consulted.

Perhaps there is testimony far older than the colonial records of the Inquisition. In the collection of Hans Namuth of New York is a mushroom stone of extraordinary features. The cap of the mushroom carries the grooved ring that, according to Stephan F. de Borhegyi, is the hallmark of the early pre-Classic period, perhaps 1000 B.C. The stone comes from the Highlands of Guatemala. Out of the stipe there leans forward a strong, eager, sensitive face, bending over an inclined plane. It was not until we had seen the doncella leaning over a metate and grinding the sacred mushrooms in Juxtlahuaca in 1960, that the explanation of the Namuth artifact came to us. The inclined plane in front of the leaning human figure must be a metate. It follows that the face must be that of a woman. Dr. Borhegyi and I went to see the artifact once more: it was a woman! A young woman, for her breasts were only budding, a doncella. How exciting it is to make such a discovery as this: a theme that we find in the contemporary Mixteca, and in the Sierra Mazateca, and in the Zapotec country, is precisely the same as we find recorded in Jacinto de la Serna and in the records of the Santo Oficio. Again it is precisely the same (if our interpretation of the silent witness in the New York studio of Mr. Namuth be correct) as in a stone carving that dates back perhaps 2,500 years!

Two views of mushroom stone in Namuth collection; early pre-classic, B.C. 1000-500. The figure emerging from stipe is believed to be that of a young woman before metate or grinding stone. Note her breasts.

Photos by Hans Namuth
The Present Status of Ololiuhqui and Hallucinogens of Mexico


10. 'Teo' means 'god' in Nahautl; no Nahautl word is more richly documented than this. The resemblance to the Latin and Greek word for 'god' is one of those fortuitous convergences of sound and meaning that occur in language studies. Given the multiplicity of languages in the world and the limited number of sounds that the human voice can utter, they are inevitable. 'Nacatl' means 'flesh', and 'nanacatl' is used for mushroom, a plural form of the word for 'flesh'. This interpretation of the word was accepted from the beginning: three early colonial sources take it for granted. No modern Nahautl scholar disputes it.

11. 'Identification of the Teonanacatl, or "Sacred Mushroom" of the Aztecs, with the prickly cactus, Lophophora, and an account of its ceremonial use in ancient and modern times', an address delivered May 4, 1915, before the Botanical Society of Washington. Published as an 'An Aztec Narcotic (Lophophora Williamsii)' in Journal of Heredity, Vol. 6, July 1915.


13. The Elements of Mazatec Witchcraft', Gothenburg Ethnographical Museum. Ethnographical Studies 9, 1939, pp. 119-149. Also 'Some Notes on the Mazatec'; Lecture before Sociedad Mexicana de Antropologia, Mexico, Aug. 4, 1938, published by Editorial Cultura, 1939. In both papers Johnson speaks of the Mazatec practice of consuming an infusion of a plant known as hirba Maria for divination purposes. This is surely the plant that we have called hojas de Maria, 'leaves of the Virgin Mary', and that has lately been named Salvia divinorum Epling & Játiva; we suppose it is the pipiltinintitli of Colonial Nahautl. Incidentally Ing. Weitlaner discovered a Mazatec informant in the Chinantla who gave him the most extensive testimony about this plant that we had had until it was identified in 1962. See 'Curaciones Mazatecas', AINAH, Vol. IV, No. 32, 1949-50.


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19. AB: Chap. 5, Pipiltinsintiltli.


21. V. P. Wasson and R. Gordon Wasson: Mushrooms, Russia and History. pp. 324-6; also Plate LIV. Also Roger Heim and R. Gordon Wasson, Les Champignons Hallucinogènes du Mexique, Chap. III, Fig. 15 bis.


25. AB: Chap. 6, El Complejo del Olooliuqui, Para 7. The author did not know of the use of Ipomea seeds when he published his book; in fact, he associated olooliuqui with the Solanaceae rather than the Convolvulaceae. He explained the blackness of the seeds as an attribute caused by age.


Chico’s visit to the Chatino country served a dual purpose. In Beyond Telepathy (Doubleday, N.Y., 1962) Andrija Puharich on p. 20 had written, ‘The author was also informed by certain brujos among the Chatino Indians (living in Southern Oaxaca) that they used the Amanita muscaria for hallucinogenic purposes. The proper dose is one-half of a mushroom.’ If true, this would be sensational. It is not true. A. muscaria is the hallucinogenic mushroom of the Siberian tribesmen in their rites. It is not used in Mexico.

When we first began visiting the Indian country of southern Mexico, we were expecting to find that the hallucinogenic mushroom there was A. muscaria. For ten years we combed the various regions and we have invariably found that it played no role in the life of the Indians, though of course it is of common occurrence in the woods. We had visited the Chatino country, where we were accompanied by Bill Upson of the Instituto Lingüístico de Verano, who speaks Chatino. Later he likewise helped Puharich, but he informs us that no brujos in his presence testified to the use of a mushroom answering to the description of A. muscaria. After the Puharich statement had appeared, I gave Bill a photograph in color of A. muscaria, and he returned to Juquila and Yaitepec. An informant named Benigno recognized the mushroom at once and identified the stage of development that it had reached, as would be expected of a countryman intimately familiar with his environment. He said the people in his area do not take that kind of mushroom. Chico Ortega is a Zapotec Indian of mature years, keen intelligence, high sense of responsibility, and vast experience throughout the villages of the State of Oaxaca. In the summer of 1962 I sent him, with the color photo, to sound out Chatino villagers as to the use they made of it. Discretely, he went from village to village. The results were uniformly and unanimously negative.

Puharich in The Magic Mushroom as well as in his most recent book is unduly impressed with the occurrence of A. muscaria. Wherever the species of trees occur with which it lives in mycorrhizal relationship, it is common. It is one of the commonest of fungi in North America and Eurasia. Puharich quotes at length as an authority Victor Reko, a notorious farceur, not to be confused with his cousin, Blas Pablo Reko. Puharich does not identify the spot where he met his brujos, though it seems probable that he did not get beyond the mestizo town of Juquila. He does not explain how he put his question to them, how he explained over a double linguistic barrier what A. Muscaria looked like. He does not explain what precautions he took to avoid a leading question that would almost certainly produce his desired answer.


29. AB: ‘La Familia de los Solanos,’ fnnt. 45.

30. It is important to note that the nine miniature mushroom stones found at Kaminaljuyu, Guatemala, and reported by Borhegyi, 1961, figure 1, were found in a sealed cache together with nine miniature legless metates accompanied by manos. The fact that the metates were found together in association with the mushroom stones indicates the possibility that they were used together in ceremonials, probably for crushing or grinding mushrooms or oolilitqui seeds.