

The *Salvia divinorum* Research and Information Center

Salvia divinorum is an extraordinary herb used in shamanism, divination, healing, meditation, and the exploration of consciousness.

(This site is created and maintained by [Daniel Siebert](#))

Image Gallery

(click on an image for a closer look)



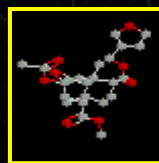
Seeds



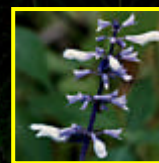
Seedling



Leaves



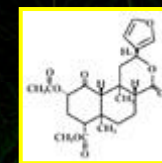
Salvinorin A



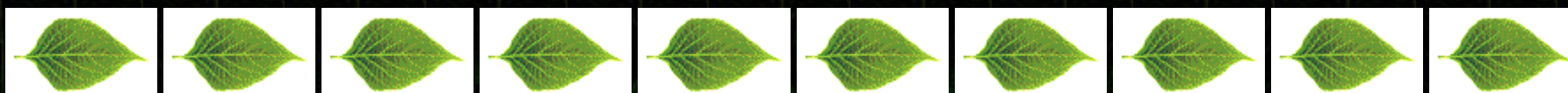
Inflorescence



Corolla



Salvinorin A



[The Sage Wisdom Salvia Shop](#) The premiere source for *Salvia divinorum*.

Offering the finest quality leaves, extracts, seeds, and rare clones. (Sales help support this site.)

[Daniel Siebert's calendar of upcoming *Salvia divinorum* related public speaking engagements.](#)

[The *Salvia divinorum* FAQ.](#) Answers to Frequently Asked Questions about *Salvia divinorum*.

[The *Salvia divinorum* User's Guide.](#) A basic educational manual.

[The User's Guide in PDF format.](#) You'll need the [Adobe Acrobat Reader](#) to view this file.

[Le Guide d'utilisation de la *Salvia divinorum*.](#) Un manuel éducatif de base (The User's Guide in French).

[La Guía de Usuarios de *Salvia divinorum*.](#) (The User's Guide in Spanish).

[La Guida all'uso della *Salvia divinorum*.](#) (The User's Guide in Italian).

🔗 [How to achieve effects from smoked *Salvia divinorum*.](#)

🔗 [What's new in the world of *Salvia divinorum*.](#) (Updated August 28, 2000).

🔗 [How to propagate and grow *Salvia divinorum*.](#)

🔗 [Trip reports.](#) Including an account of how I first discovered the extraordinary effects of refined salvinorin A.

🔗 [The *Salvia divinorum* chapter of "Pharmako/poeia"](#) by Dale Pendell. (Also available in an [Italian](#) translation).

🔗 [On consulting *Salvia divinorum* as an oracle.](#) (Also available in an [Italian](#) translation)

🔗 [The moon.](#) Choosing a propitious night for a *Salvia divinorum* ceremony?

🔗 [Salvia divinorum inspired arts.](#) A collection of visual arts, poetry, and audio arts.

🔗 [The virtual *Salvia divinorum* altar.](#) Ceremonial objects and offerings dedicated to the spirit of the plant.

🔗 [Sagewise](#) A closed membership email based discussion forum for *Salvia divinorum* researchers and professionals.

🔗 [A listing of *Salvia divinorum* clones.](#)

🔗 [A map of *Salvia divinorum*'s native region.](#) The red asterisk marks the spot.

🔗 [A beautiful Chime® rendering of salvinorin-A showing electron clouds.](#) Use your mouse to manipulate the molecule!

To view this, you will first need the [Chime® plug-in for your browser.](#)

🔗 [Scanning electron micrographs of a *Salvia divinorum* seed.](#) Photos by Michael Dunlap.

🔗 [Photomicrographs of a *Salvia divinorum* leaf.](#) 40x, 100x, 200x, 400x, 1000x. Nice trichomes!

🔗 [A comprehensive bibliography of *Salvia divinorum* and salvinorin A.](#)

🔗 [How you can help support this site and *Salvia divinorum* related research.](#)

Articles from scientific journals, and other publications



[The Botany of *Salvia divinorum* \(Labiatae\)](#) by Aaron S. Reisfield. A fantastic HTML version of his paper with lots of great photos. Originally published in *SIDA* (1993) 15: 349-366.

🔗 [Salvia divinorum and Salvinorin A: New Pharmacologic Findings.](#)

by [Daniel Siebert](#). *Journal of Ethnopharmacology* (1994).

🔗 [High Performance Liquid Chromatographic Quantification of Salvinorin A from Tissues of *S. divinorum*](#) Epling & Játiva-M.

by Gruber, John W., [Daniel J. Siebert](#), Ara H. Der Marderosian, and Rick S. Hock. *Phytochemical Analysis* (1999).

- 🔍 [Salvinorin-A: Notes of Caution.](#)
by [Daniel Siebert](#). *The Entheogen Review* (1994).
- 🔍 [Daniel Siebert Speaks...](#)
Interviewed by Will Beifuss. *The Entheogen Review* (1999).
- 🔍 [A New Species of Salvia from Mexico.](#)
by Carl Epling and Carlos D. Játiva-M. *Botanical Museum Leaflets Harvard University* (1962).
- 🔍 [A New Mexican Psychotropic Drug From the Mint Family.](#)
by [R. Gordon Wasson](#). *Botanical Museum Leaflets Harvard University* (1962).
- 🔍 [Notes on the Present Status of Ololiuhqui and the Other Hallucinogens of Mexico.](#)
by [R. Gordon Wasson](#). *Botanical Museum Leaflets Harvard University* (1963).
- 🔍 [A Mazatec girl preparing Salvia divinorum leaves on a metate.](#)
Photo taken in 1962 by [R. Gordon Wasson](#).
- 🔍 [In Search of the Magic Plant "Ska Maria Pastora" in the Mazatec Country.](#)
by [Albert Hofmann](#). From: *LSD: My Problem Child* (1979).
- 🔍 [Salvinorin, A New trans-Neoclerodane Diterpene from Salvia divinorum \(Labiatae\).](#)
by Alfredo Ortega, et al. *Journal of the Chemical Society Perkins Transactions I* (1982).
- 🔍 [Ethnopharmacology of Ska Maria Pastora \(Salvia divinorum, Epling and Jativa-M.\).](#)
by L.J. Valdés III, et al. *Journal of Ethnopharmacology* (1983).
[Ethnopharmacology of Ska Maria Pastora \(an Italian translation\).](#)
- 🔍 [Divinorin A, a Psychotropic Terpenoid, and Divinorin B from the Hallucinogenic Mexican Mint, Salvia divinorum.](#)
by L.J. Valdés III, et al. *Journal of Organic Chemistry* (1984).
- 🔍 [Loliolide from Salvia divinorum.](#)
by L.J. Valdés III. *Journal of Natural Products* (1986).
- 🔍 [Studies of Salvia divinorum \(Lamiaceae\), an Hallucinogenic Mint from the Sierra Mazateca in Oaxaca, Central Mexico.](#)
by L.J. Valdés III, et al. *Economic Botany* (1987).
- 🔍 [Salvia divinorum and the Unique Diterpene Hallucinogen, Salvinorin \(Divinorin\) A.](#)
by L.J. Valdés III. *Journal of Psychoactive Drugs* (1994).
- 🔍 ["Divinorin C," a New Neoclerodane Diterpene from a Bioactive TLC Fraction of Salvia divinorum.](#)
Lab notes from the desk of L. J. Valdés III. *The Salvia divinorum Research and Information Center* (2000).
- 🔍 [The Early History of Salvia divinorum.](#)
by L. J. Valdés III. *The Entheogen Review* (2001) X(2): [73-75]

- 🔗 [Some photos of *Salvia divinorum* from the Sierra Mazateca](#), by L.J. Valdés III
 - 🔗 [The Absolute Stereochemistry of Salvinorins](#), by Koreeda, M., *et al. Chemistry Letters* (1990).
 - 🔗 [Salvinorin: The Psychedelic Essence of *Salvia divinorum*](#). An extraordinary book by D.M.Turner (1996).
 - 🔗 [Salvia divinorum Epling et Játiva-M. \(Labiatae\): An Ethnopharmacological Investigation](#), by Sherry A. Rovinsky. *McNair Scholarly Review* (1998).
 - 🔗 [The Mushrooms of Language](#) by Henry Munn. This essay provides valuable insight into the Mazatec shamanic world.
 - 🔗 [NovaScreen® receptor selectivity report on salvinorin-A](#).
 - 🔗 [Salvia divinorum Epling et Jativa](#) by Jonathan Ott. *Eleusis*, n. 4, pp. 31-39, 1996.
 - 🔗 ["Sage Wisdom" An article from TRP Magazine](#).
 - 🔗 [Cultivating Diviner's Sage](#) by Will Beifuss (from TRP Magazine).
-

Additional information on *Salvia divinorum* and related topics

- 🔗 [Lycaeum's Salvia Archives](#).
 - 🔗 [Salvia Trip Reports at Lycaeum](#).
 - 🔗 [Erowid - Salvia divinorum page](#).
 - 🔗 [Something from the Heffter Research Institute](#).
 - 🔗 [USDA info on *Salvia divinorum*](#).
 - 🔗 [A photo of *Lagochilus inebrans* in bloom](#). An intriguing psychoactive member of the Labiatae.
 - 🔗 [Salvia splendens](#). A psychoactive sage???
-

Relevant organizations

- 🔗 [The Council on Spiritual Practices](#). Dedicated to making direct experience of the sacred more available to more people.
- 🔗 [The Drug Policy Foundation](#). An independent, nonprofit organization favoring alternatives to the current war on drugs.
- 🔗 [The Alchemind Society](#). Seeking to establish, promote, and protect "cognitive liberty".
- 🔗 [MAPS](#) (The Multidisciplinary Association for Psychedelic Studies). Supporting psychedelic research since 1986.
- 🔗 [The Lycaeum](#) The world's largest entheogenic database and community.
- 🔗 [The Media Awareness Project](#) A worldwide network dedicated to drug policy reform.

Mail Center



I am always interested in hearing reports from people regarding their experiences with this herb. [Click here](#) to send me your thoughts, comments, experiences, and suggestions. I do read most of the email I receive; however, I receive more email than I have time to reply to. When replying to email, I give priority to correspondence that is particularly important or interesting.

Share this web site with a friend. [This link](#) opens a blank email window on most browsers. Please send your friends a note and let them know about "The *Salvia divinorum* Research and Information Center". Don't forget to send them the URL: (<http://sagewisdom.org>).

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(This site was last updated on September 3, 2001)



DANIEL SIEBERT is an ethnobotanist, educator, and artist. He has been researching *Salvia divinorum* for over twenty years and was the first person to work on the human pharmacology of salvinorin A and to clearly identify this compound as the psychoactive principal of the plant. He has studied *Salvia divinorum* in its native habitat and has worked with it under the guidance of Mazatec shamans. His work appears in scientific journals and other publications. Mr. Siebert is the creator of the popular [Salvia divinorum Research and Information Center](http://www.sagewisdom.org/danielsiebert.html) web site. He is also the founder and moderator of *Sagewise*, a closed-membership email-based discussion forum for *Salvia divinorum* researchers and professionals. He currently resides in Malibu, California and is completing work on his comprehensive book about *Salvia divinorum*, [*Divine Sage*](#).

Personal interests include:

Ethnobotany, botany, horticulture, pharmacology, chemistry, consciousness studies, philosophy, nature, ashtanga yoga, the creative and theatrical arts, juggling, and funambulism.

Current projects include:

Ethnobotanical research: Expeditions to the Sierra Mazateca of Oaxaca Mexico to study the role of *Salvia divinorum* in Mazatec culture, its traditional uses, and the beliefs, rituals, and mythology associated with it.

Pharmacology and consciousness studies: Identifying and characterizing the range of effects produced by *Salvia divinorum*, through experiments, interviews, and the analysis of thousands of experiential reports. Exploring the tremendous potential of this herb as tool for understanding the nature of human consciousness.

Collaboration and correspondence: Sharing resources and knowledge. Bringing together the skills and expertise of scientists throughout the world, to investigate such questions as: How does salvinorin A produce its effects? What is its receptor site affinity? Are there pharmacologically active isomers and

analogs?

Publication and documentation of important findings: Scientific journals, books, film, photography, [my web site](#), and magazines.

Community outreach: Lectures, workshops, [interviews](#), documentaries, the *Sagewise* email discussion forum.

Providing a mail order resource for *Salvia divinorum* and related materials: [The Sagewise Salvia Shop](#) offers *Salvia divinorum* leaves, standardized extracts, a unique sublingual extract, live cuttings of many rare clones, books, etc.

Botanical investigations and horticultural experimentation: Looking for answers to several important questions, including:

- Is *Salvia divinorum* native to the Sierra Mazateca or was it introduced from another area?
 - Does it exist in truly wild habitats, or are all non-cultivated populations feral?
 - Since it spreads almost exclusively through asexual propagation, how limited is its genetic diversity?
 - Are there other powerfully psychoactive *Salvia* species?
-

Research financing: Primarily self-financed, with some monies generated through [The Sagewise Salvia Shop](#). I am currently seeking grants and contributions for several important research projects. Philanthropic organizations or individuals who are interested in furthering the study of *Salvia divinorum* by contributing funds or other resources, are encouraged to contact me.

To discuss research projects, collaborations, speaking engagements, consultations, workshops, interviews, etc. Please contact me at: dsiebert@gte.net

Salvia divinorum seeds



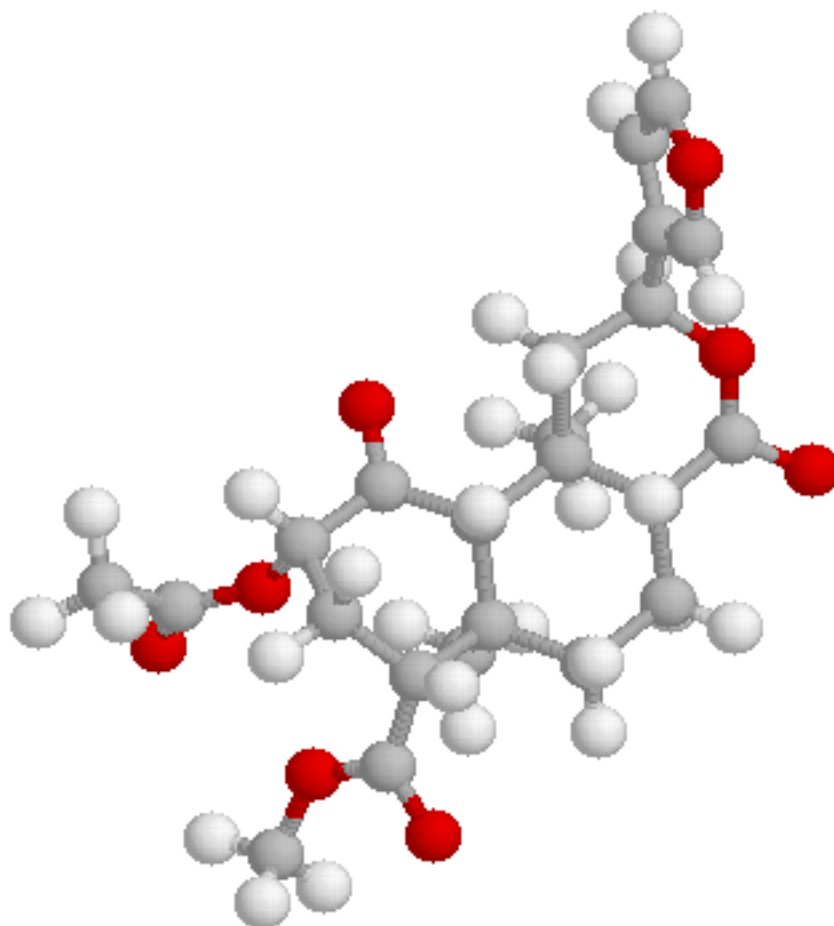
These seeds were found by Daniel Siebert in 1994 on plants of the Wasson/Hofmann clone growing at the *Botanical Dimensions* Botanical Garden in Hawaii. This was the first documented instance in which *Salvia divinorum* plants were found to spontaneously produce seeds. Each mark on the ruler represents 1 millimeter.

A *Salvia divinorum* seedling





This is an unusual clone of *Salvia divinorum*. I have named it "Luna" (cv. "Luna", syn. Siebert 9401). I discovered it in 1994 as a single stem arising from the ground in a patch of the otherwise normal "Wasson/Hofmann" clone growing at the *Botanical Dimensions* botanical garden in Hawaii. It is either a sport of the "Wasson/Hofmann" clone that sprung up from the root-crown of one of the surrounding plants, or it may have originated from a seed that fell from one of the surrounding plants. Given that it is extremely rare for *Salvia divinorum* to produce viable seeds and that any seedlings produced tend to be very weak, it is most likely that this is actually a sport--possibly some type of polyploid. This clone is distinct from most clones: the leaf margin is unusually deeply serrated and the leaf is remarkably round, rather than the typical ovate shape.



Salvinorin A

To view a molecular model of salvinorin A that can be rotated and manipulated in various ways, you will first need the [Chime® plug-in](#) for your web browser. Once you have the plug-in installed, go [here](#) to access the model.

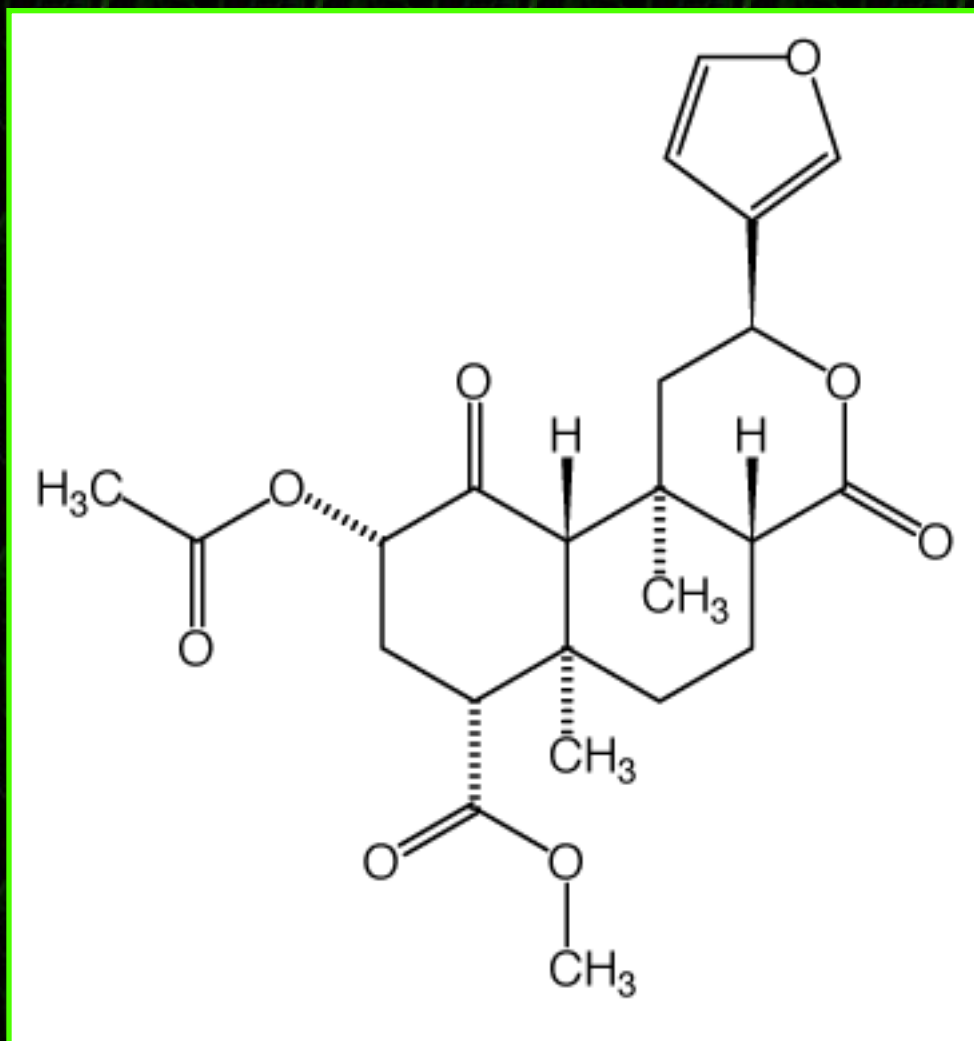
The Inflorescence of *Salvia divinorum*



The corolla of *Salvia divinorum*



Salvinorin A



To view a molecular model of salvinorin A that can be rotated and manipulated in various ways, you will first need the [Chime® plug-in](#) for your web browser. Once you have the plug-in installed, go [here](#) to access the model.

The Sage Wisdom Salvia Shop Gatekeeper

IMPORTANT! Before placing an order, you must verify that you are a responsible adult over 18 years of age and that you understand and agree with all of the following statements. After reading these statements, please click on the appropriate button at the bottom of this page.

- I am an adult over 18 years of age. (Warning to minors: false representation of your age constitutes fraud.)
- I understand that credit card fraud is a serious crime and therefore will not use another person's credit card unless they have authorized me to do so.
- Before completing my order, I will read the ordering instructions and information at the bottom of the Sage Wisdom Salvia Shop page.
- I have read [The Salvia divinorum FAQ](#) and the [The Salvia divinorum User's Guide](#).
- I understand that *Salvia divinorum* can be quite powerful and must be used responsibly and safely.
- I understand that *Salvia divinorum* can profoundly alter perception and behavior; therefore, I will always work with it in a safe, secure, and private environment.
- I understand the importance of having a sober sitter present when exploring the deeper levels of *Salvia divinorum*'s effects.
- If I share *Salvia divinorum* with others, I will first make sure that they are thoroughly informed about the nature of the experience and how to work with it safely.
- I understand that individual sensitivity to *Salvia divinorum* varies quite a lot from person to person; some people are highly sensitive and

others are incredibly insensitive.

- **I understand that when first experimenting with *Salvia divinorum*, one must start with a low dose; if stronger effects are desired, the dosage can gradually be increased on subsequent occasions until one discovers one's own degree of sensitivity and preferred level of effects.**
- **I take full personal responsibility for my use of any products purchased and will not hold the vendor liable for any mishap that may result from use.**
- **I have made a personal commitment to use this herb in a responsible, intelligent, and safe manner.**

Yes. I am in agreement
with all of the above.

No. I do not agree
with all of the above.

Daniel Siebert's *Salvia divinorum* Seminars and lectures.

(This site is created and maintained by [Daniel Siebert](#))

Next scheduled event: Tuesday, August 14, 2001, 2-4 p.m. Daniel Siebert will be on "Vibrational Voyage." A radio program on KKUP, 91.5 FM, a non-commercial community radio station broadcasting to the San Jose/Oakland/Santa Cruz/Monterey Bay areas of California. The show is dedicated to the exploration of consciousness. Interested listeners can also catch the live show on the web via the station's web site at: www.kkup.com

Seminars are tentatively being planned for the following locations:

Sierra Madre (near Los Angeles), California

San Francisco, California

Seattle, Washington

London, U.K.

New York, New York

(Details will be announced here as soon as they are available. If you would like to receive email notification about any of these events, please drop me an email and I will make sure that you receive it.)

The Salvia divinorum FAQ

(version 1.7 last updated June 18, 2000)

Answers to Frequently Asked Questions about Salvia divinorum

(Created by "Sage Student", with contributions from Daniel Siebert and various members of the Salvia e-mail discussion forum.)

[HTML rendering etcetera by [Daniel Siebert](#)]



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I. ACKNOWLEDGMENT

Although I wrote much of this FAQ to fill a perceived need for this information among those involved with *Salvia divinorum*, doing so would not have been possible without the advice, criticism, encouragement, information, anecdotal material, and editing provided by many others. Specifically I would like to thank four 'Salvia scholars' (in alphabetical order):

- Claude Rifat for his theories about the relation of salvinorin A to the dreaming process, for his valuable terms 'oneirogen', 'exoreality' and 'endoreality', for his pioneering observations on the psychoactivity of *S. splendens* and other members of the family Labiatae, and for his generosity in sharing botanical material.
- Daniel Siebert, the host of this web site and the founder and moderator of the original "Salvia" email discussion forum (now the "Sagewise" mailing list), for his contributions and support of this project, his research papers on *Salvia divinorum* and salvinorin A, his attempts to keep the focus of discussions on Salvia, his constructive criticism, and for all the valuable information he has shared.
- Leander Valdes III for his research papers on Salvia, salvinorin, and the traditional role Salvia plays when used by Mazatec healers, and for his encouragement, as well as for corrections of some of my mistakes.
- William White whose much earlier creation of a Salvia FAQ proved so valuable to those interested in the subject, who has elucidated much valuable neuroscience, and who has been most supportive of the effort to create an updated FAQ.
- Many thanks to Will Penna for valuable editorial help without which the FAQ would be much less readable.
- I wish to thank all the members of the Salvia Draft FAQ e-mail list not already mentioned (some of whom are known to me only by screen names) whose contributions, critiques and questions have added greatly to this FAQ. They patiently suffered numerous e-mailing of draft material and gave helpful commentary. Some of them contributed valuable material which has been included in the FAQ. The members are, listed in alphabetical order:

Tom Amundrud, cystonic, damion, DarkCobra, Discarnate Intelligence, Greendrag, infekshun, Gwyllm Llwydd, Todd Pisek, ram, and Justin Tutty.
- Last but not least I wish to thank all the many members of the Salvia e-mail list for their many interesting stories, pertinent questions, trip reports, theories, and fascinating debates.
- My apologies to anyone whose contributions I failed to acknowledge.

Any such oversight was not intentional.

II. DISCLAIMER AND GENERAL INFORMATION

This is a FAQ (answers to Frequently Asked Questions) document about *Salvia divinorum* and its use. It is NOT intended to either encourage or discourage use of this plant or any pharmacologically active compound (e.g. salvinorin A) that it contains. **IT IS INTENDED TO DISCOURAGE IRRESPONSIBLE USE.** It is intended to make readers more knowledgeable about this interesting plant, its effects, and how it may best be used safely and responsibly by those who choose to do so. Choosing to work with it is a decision that only you can make. One should learn as much as possible about it before going forward with that decision.

The pharmacology of *Salvia divinorum* and its active principal, salvinorin A, remain poorly understood. Although *Salvia divinorum* appears to be quite safe in terms of physiological effects, one must bear in mind that virtually no toxicological studies have been done. No toxicity is associated with traditional Mazatec methods of oral ingestion; however, nothing is known regarding any possible high-dose toxicity. Like tobacco, smoking *Salvia divinorum* may involve health risks associated with the inhalation of various products of combustion, such tar, carbon monoxide, etc.

At the time of this writing, *Salvia divinorum* is a completely legal herb throughout the entire world. However, since many consciousness-altering herbs have been pronounced illegal by various governments in the past, it is certainly possible that a similar fate may be in store for this herb in the future. Don't use *Salvia divinorum* (or salvinorin A) anywhere its use or possession is subject to legal penalty. This FAQ material is for informational use only; I explicitly am telling you not to take any action based on this document which would break any law.

Used irresponsibly, *Salvia divinorum* and salvinorin A can be dangerous. If you decide to try this herb, or any preparation containing salvinorin A, it is your responsibility to take proper precautions so that you do not harm yourself or others while under its influence. Neither the author of this FAQ, nor any individual who contributed to its creation or posting, or who submitted material contained herein, nor the web site host, nor anyone but you yourself is responsible for your actions or their consequences.

This FAQ is intended to present the facts that are known about *Salvia divinorum* at this time (the current version date appears at the top of this document). While care has been taken to be as objective as possible, many issues discussed will be controversial and complete objectivity is impossible. Although fairly extensive in its coverage, this FAQ is not comprehensive.

DO NOT COPY THE FAQ TO OTHER WEB SITES

This document is updated frequently. The most recent version can always be found at: <http://sagewisdom.org/faq.html>. I do not want to see obsolete versions floating around on the Internet. So please do not copy it to other web sites. If you want to make the FAQ accessible from another web site, simply include a link to the above URL.

This FAQ is intended for mature, legally-competent adults, willing and able to make their own decisions without blaming others for what they do, or don't do. It is not written for minors, incompetents, or for any individual who is unable, or unwilling, to take complete legal and moral responsibility for his or her actions. By the act of continuing to read this FAQ you are agreeing that you are a legally competent responsible adult, and that you are willing to take sole responsibility for the consequences of your actions. If you do not agree with this statement, please stop reading now.

III. SALVIA DIVINORUM BASICS

Q. What is Salvia divinorum?

A. Salvia divinorum is a plant used for its psychoactive effects. Given the right dose, individual, set and setting, it produces a unique state of 'divine inebriation' which has been traditionally used by Mazatec healers. This inebriation is quite different from that of alcohol. S. divinorum is both similar to, and different from, other drugs that affect the brain and behavior. In many ways Salvia divinorum is a unique 'magical' herb. Salvia (and the salvinorin it contains) is very difficult to categorize pharmacologically. It does not fit well into any existing pharmacological class. Louis Lewin, the father of psychopharmacology called vision inducing drugs 'phantastica'. Let us dust off this venerable term and recycle it by calling Salvia divinorum a 'phantasticant'.

Q. Does Salvia divinorum have a history of traditional use?

A. Salvia divinorum is used as a sacred medicine by indigenous shamanic healers living in the mountainous Sierra Madre Oriental in the northeastern corner of the Mexican State of Oaxaca. In Spanish, these specialized healers are referred to as curanderos; in Mazatec these people are called cho-ta-ci-ne ("one who knows"). Salvia divinorum is primarily used in situations where the curanderos feels it is necessary to travel into the supernatural world in order to discover the true cause of the patient's trouble. It is used in a ceremonial manner to induce a visionary trance state, within which it is possible determine the underlying cause of disease and to learn what steps should be taken to remedy such disease. It is also used in cases of theft or loss to determine the circumstances and whereabouts of missing objects. The leaves are always used fresh and are consumed orally; either by chewing the leaves or drinking an aqueous infusion of the crushed-leaf juices. Sometimes it is given to the patient, sometimes it is taken by the curandero and sometimes both take it together.

Most reports describe the use of this plant by Mazatec shamans, and although it is just

barely touched upon in the anthropological literature, it is also reportedly used by their immediately contiguous neighbors, the Cuicatecs and Chinatecs. Given that the plant is quite easily propagated, it is surprising that such an extraordinary herb is only known of in such a geographically limited area. It seems quite probable that it would have found its way to other neighboring tribes through sharing and trade. Perhaps its use is still concealed from the outside world by other groups of indigenous Mexican Indians who still prefer to keep such a sacred plant secret.

IV. OBTAINING SALVIA

Q. Can I get free Salvia?

A. Many Salvia users grow their own. Some have adopted the ethic of occasionally giving away a small number of excess cuttings free, or at shipping cost, to other responsible adults wishing to grow their own. This practice helps assure that Salvia will never become extinct, and by the law of supply and demand, helps keep the price reasonable for those purchasing from legitimate commercial suppliers.

Q. Where can I buy Salvia?

A. [The Sage Wisdom Salvia divinorum Shop](#) is a great source for live cuttings, *Salvia divinorum* leaves, standardized extracts, Sage Goddess Emerald Essence, etc. A detailed listing of other suppliers can be found in: ["Salvia divinorum and Salvinorin A: The Best of the Entheogen Review 1992-1998"](#) . Another good resource is: ["The Psychedelic Resource List"](#) by Jon Hanna.

Q. Salvia divinorum is often sold by the ounce. How many dried leaves are in an ounce?

A. This can vary quite a lot. An average, large, mature leaf weighs about 1/3 gram dry. However, a typical harvest of leaves will include leaves of all sizes. A typical ounce usually contains 100 - 200 leaves. It is generally best not to estimate dose by leaf count, but rather by weight.

Q. How many smoked doses are in an ounce of leaf?

A. It varies, depending on the potency of the leaf and the sensitivity of the individual. A person of average sensitivity should be able to achieve moderately strong effects from 1/2 gram of average potency leaf, or 1/4 gram of stronger material, such as "Sierra Mazateca Prime Harvest". To achieve the full effects from a given quantity of leaf, it is very important to use the proper smoking technique.

Q. How many doses are in one ounce of dried *Salvia divinorum* when using the quid method of ingestion?

A: One ounce should be enough for 4–12 doses, depending on the strength of effects you are after. It is best to rehydrate the leaves with a little water before ingesting them.

Q. Salvinorin A fortified leaf is often sold by the gram. How many doses are in a gram?

A. This depends on potency of the particular product and the individual's sensitivity. The "regular-strength" offered by [The Sage Wisdom Salvia Shop](#) contains 15 mg of salvinorin A per gram. If you are working with this product, I recommend starting with about 1/20 gram (50 mg). If you find that the effects are too mild for you at this level, then gradually increase the dose until you find the level that works best for you.

Q. How can I measure 1/20 gram (50 mg)?

A. If you do not have a scale that can measure this quantity, you can simply divide one gram into 20 even parts. First divide the gram into four even piles, then divide each of those into five. It is important that you divide it up as evenly as possible. Either package and store all 20 parts separately (gelatin capsules work great for this), or just keep one part separate to use as a visual reference to estimate the correct amount to use in the future.

Q. How long can I store Salvia divinorum leaves or salvinorin A fortified leaf without them losing potency?

A. Probably for decades. The active principal, salvinorin A, is quite stable and can be stored at room-temperature. It is probably a good idea to store it in a dark location, such as a drawer or cupboard, so that it is not exposed to the potentially harmful effects of UV light.

Q. Where can I obtain seeds for *Salvia divinorum*?

A: *Salvia divinorum* seeds are extremely rare. For reasons not well understood, the plant almost never produces them (even when carefully hand pollinated). You are unlikely to find them offered for sale anywhere. *Salvia divinorum* seeds have a very low rate of germination and often the seedlings do not survive. Typically, one can only expect about 10% of a batch of the seeds to develop into healthy plants.

V. SALVIA TRIPS AND HOW TO RATE THEM

Q. What is a Salvia divinorum trip like?

A. It's probably not like what you expect. Even if you have considerable experience with various drugs, Salvia is not much like what you have encountered. Salvia is unique, and it is best understood on its own terms, and not by analogy with other substances. Salvia is not a recreational drug, rather, it is best used by those wishing to explore deep meditative states, spiritual realms, mysticism, the nature of consciousness and reality, or the possibilities of shamanistic healing. Experiences vary with the individual, set, and setting as well as with dose and route of administration. It produces a short-lived inebriation that is very different from that of alcohol. However, like alcohol it interferes with the ability to drive, produces incoordination (ataxia), and may produce slurred speech.

The inebriation—at low doses—can facilitate aesthetic and sensual appreciation. However, the experience is not marijuana like, and Salvia is not a marijuana substitute. At somewhat higher doses visionary trances occur. The lowest level visions consist mainly of closed eye imagery somewhat similar to the hypnagogic phenomena that many people experience when falling asleep. These tend to be two dimensional faint images. The term 'eye candy' is an appropriate description of the interesting closed eye visuals that are not confused with reality. At this level communication with others is still easy and one can move about although clumsiness will occur. With a higher dose vivid visual images occur even with eyes open, and with eyes closed one may completely enter the visionary world, and it will seem quite real, but upon opening ones eyes one will reestablish contact with ones surroundings. Speech patterns may be interfered with and communication is difficult. At still higher doses, one remains conscious but completely enters an inner realm and loses all contact with ones actual surroundings. Some people may move around in this deep trance state and for this reason a sitter is required for anyone seeking to explore such deep levels. With very high dosage a brief period of unconsciousness or at least the inability to subsequently remember the experience will occur. It is useful to have a scale to describe Salvia trips. One such rating scale is based on the mnemonic S-A-L-V-I-A.

Q. Maybe the scale can help me know what to expect. What's the scale?

A. The scale describes six different levels of intoxication, each one more intense than the previous. The overall intensity of Salvia trips is scored according to the highest scale level attained during the course of the trip.

S-A-L-V-I-A Trip Rating Scale

Level -1 "S stands for SUBTLE effects." A feeling that 'something' is happening, although it is difficult to say just what. Relaxation and increased sensual appreciation may be noted. This mild level is useful for meditation and may facilitate sexual pleasure.

Level - 2 "A stands for ALTERED perception." Colors and textures are paid attention to. Appreciation of music may be enhanced. Space may appear of greater or lesser depth than is usual. But visions do not occur at this level. Thinking becomes less logical, and more playful; short term memory difficulties are may be noted.

Level - 3 "L" stands for LIGHT visionary state." Closed eye visuals (clear imagery with eyes closed: fractal patterns, vinelike and geometric patterns, visions of objects and designs). The imagery is often two dimensional. If open eyed visual effects occur these are usually vague and fleeting. At this level phenomena similar to the hypnagogic phenomena that some people experience at sleep onset occur. At this level visions are experienced as 'eye candy' but are not confused with reality.

Level - 4 "V stands for VIVID visionary state." Complex three dimensional realistic appearing scenes occur. Sometimes voices may be heard. With eyes open contact with consensual reality will not be entirely lost, but when you close your eyes you may forget about consensus reality and enter completely into a dreamlike scene. Shamanistic journeying to other lands, foreign or imaginary; encounters with beings, entities, spirits; or travels to other ages may occur. You may even live the life of another person. At this level you have entered the shaman's world. Or if you prefer you are in 'dream time'. With eyes closed you experience fantasies (dream like happenings, with a story line to them). So long as your eyes are closed you may believe they are really occurring. This differs from the 'eye candy' closed eye imagery, of level 3.

Level - 5 "I" stands for IMMATERIAL existence." At this level consciousness remains and some thought processes are still lucid, but one becomes completely involved in inner experience and loses all contact with consensual reality. Individuality may be lost; one experiences merging with God/dess, mind, universal consciousness, or bizarre fusions with other objects real or imagined, e.g. merging with a wall may be experienced. At this level it is impossible to function in consensual reality, but unfortunately some people do not remain still but move around in this befuddled state. For this reason a sitter is essential to ensure the safety of someone voyaging to the inner levels. To the person experiencing this, the phenomenon may be terrifying or exceedingly pleasant; but to an outside observer the individual may appear confused or disoriented.

Level 6 - "A stands for AMNESIC effects " At this stage either consciousness is lost; or at least one is unable to later recall what one is experiencing. The individual may fall, or remain immobile or thrash around; somnambulistic behavior may occur; injuries can be sustained without pain being felt; on awakening the individual will have no recollection of what he/she did, experienced or said in level 6. People cannot ever recall what they experience in this very deep trance state. This is not a sought after level as later nothing can be recalled of the experience.

Q. Do Salvia users use any special words to describe the experience?

A. Yes. Members of the Salvia e-mail list have contributed numerous Salvia vocabulary suggestions. A few of the more accessible words and phrases submitted were: accepting, afterglow, besaged, dissociadelic, dream people, endoreality, fantasia, floating, goofy, healing, magic casements, mind tunnels, sound of silence, strange attractor, teacher, transdimensional, visions, weird, and wisdom.

Q. Could you show me an actual trip report?

A. Yes. The following is one person's report of a first meeting with Lady Salvia. It comes from Greendrag (dextro50@lycaeum.org) who has given permission for its inclusion in this FAQ.

A New Awareness Through Salvia

The Setting: A deserted beach in southern Mississippi on a bright, windy day. I was with my friend (lets call him M). He would be the trip sitter.

The Experience: I sat down in a comfortable position with my head propped up and my hands folded. M filled the pipe (a cheap cannabis pipe) to the brim with Salvia. I found myself a bit nervous...the same feeling one would feel before a carnival ride he/she has never been on. M then lit the pipe and administered the first hit to me. I held it in for a good 20 seconds. Nothing much of a cannabis buzz happened for the first three hits. I signaled for a 4th hit. I held that in for a while, and then laid my head back. All of a sudden I fell into an amnesic dream. I was thinking to myself...that's weird nothing happened. That's it? That's what Salvia is like? I don't feel a thing! Wait a minute. I'm dreaming, but I'm not asleep! Here's how I described it to a friend:

"Imagine you are on this futuristic roller coaster right before it takes off. You hear a voice that says "Get Ready...you are about to be catapulted off into the ride of your life" and then BANG...you have no idea what just happened. You seemed to have dozed off right after the bang, but you're not sleeping. You then think to yourself am I in an amusement park? Wait, I went on the roller coaster and I heard this voice tell me I am about to be catapulted into the ride of my life, or something. I don't remember anything after hearing that voice. Is THIS it??? It can't be...it seems so...familiar. Normal. I've done this a thousand times before I was old enough to retain memories. Wait...is that...I'm sleeping...who is that...this is so simple...I understand perfectly...things are always the same...".

After smoking Salvia, I felt some sort of amnesia. I was not quite sure what happened after the 3rd or 4th hit. I then realized something...this WAS the trip. It was like I fell asleep for 10 years after the 3rd hit, then right before I woke up, time traveled back 10 years and I woke up immediately after taking that hit.

During the moments after I felt like I had done this a hundred times before. I felt like I was in a scene from my childhood...almost as if I had smoked Salvia as a child and was feeling something in the present. I felt (note, I didn't see any of this, it was purely a feeling) like I was 8 years old, in a park around my house in a swing during the middle of a summer day. After I got this feeling, the feeling of the park transformed into where I was -- the beach at present age. I then began to see (through closed eyelids) what looked like a ranch in Mexico. I then **felt** that I was in the desert southwest, looking into this ranch. Through closed eyelids, I saw the beach I was on, but then a few yards away, the beach sand ended and the ranch/desert began. In the ranch, I thought I saw a beautiful Mexican lady, but I could be wrong. I then felt I was on an Indian reservation, with some Indians. I felt the feeling of the "peyoteros". I then felt the ranch/desert/reservation drift away, not in a normal fashion, but around my body

in a 360 degree turn around my body. I then felt a closeness with the aura of it all. I got the feeling that Salvia was just one of a whole library of psychedelics just waiting to be used. I then felt "normal" again and lied there still for a few moments, with my eyes closed. M had wondered off and I heard him in the distance. I then heard footsteps come behind the umbrellas, and then around them. I felt the presence of some old, yet beautiful man (could have been a woman) sprinkle some dust on me. I didn't feel the dust, but I felt something mentally. I then opened my eyes. If you have seen the movie "Contact", I felt exactly like what happened to Jodie Foster as she crashed onto the beach after being transported in that machine. Also, the scene afterward where she comes back to earth, yet still feeling she was on that beach. BTW, this was about 5-10 minutes after I had smoked that last hit.

I sat up and walked off to the edge of the beach. I was left with a sort of knowingness. I realized many things at this point after the experience. I would call THIS the best part of the trip. The theories I had come up with the days before seemed to make sense. EVERYTHING seemed to make total sense. I thought about the world I live in. That didn't make sense. Commercialism, money, business, finance, government...that made no sense. I realized that things such as fear (such of that of ghosts), jealousy, anxiety, stress, fright...these were things that are human. These things are built into the human mind to act as hurdles that we must jump. She said that things such as fundamentalist religion and science were parts of this "human" quality. None of these "human" things made sense. I realized that in the afterworld (or whatever), these things are no longer present. The human brain acts as a filter for our soul. We can not directly experience the things our soul feels, so it gets filtered through our brain. This filter adds things such as fear and hate to the things that our soul feels. I felt like that filter had been removed for a while. This could technically be called losing your mind, though it had nothing to do with sanity. I repeated to myself "If only they knew". I had the feeling of having gone to heaven. I was also shown the goodness of psychedelic drugs. She told me that she had many, many "friends"...many of them haven't been discovered yet. I walked back to the umbrellas to M. He asked me how it was. I just sat there silent, meditative. I told him "I can't tell you what this is". I had no sense of shock. I had no sense of WOW, no sense of surprise. It was just a sense of knowingness, understanding, calmness, peace. I remained silent for the whole "afterglow" period. Now, I look at things a different way. Salvia is definitely a "teacher" plant. I now look upon her (and her friends) very seriously and in the utmost respect. -Greendrag
(dextro50@lycaeum.org)

VI. METHODS OF USE

Q. How is Salvia used? What are the methods and how do they differ?

A. There are several different methods of using Salvia: These are discussed below under the questions about smoking, oral, and other methods.

Q. Okay, tell me about smoking.

A. Smoking is probably the most common method for 'Western' users. Dried Salvia leaf is readily available from commercial sources and can be smoked without further preparation in tobacco pipes, joints, or water-pipes or bongs. Salvia must be smoked hot (hotter than tobacco is) in order for salvinorin to be vaporized. The smoke is inhaled fast and hot, deeply into the lungs. Several hits in quick succession are usually required. The smoke is irritating and probably has the same sort of health risks as tobacco smoke - cancer, bronchitis, emphysema, and heart and blood vessel disease. When smoking it is a good idea to have a sitter present although many smokers do not take this advice.

Q. What is the usual dose?

A. One or two large crushed leaves ($\frac{1}{4}$ – $\frac{1}{2}$ gram). Individual requirements will vary.

Q. How strong is smoking?

A. It varies greatly depending on the dose.

Q. How long does the trip last?

A. When smoked, the first effects are noticed within 1 minute, rapidly developing to a peak which lasts 5 - 10 minutes, then gradually diminishing over the next 20 - 30 minutes. From beginning to end, the entire experience lasts 30 minutes to one hour. Best not to drive for at least several more hours - just in case your reflexes or judgement are impaired longer than you think they might be.

Q. Is there any special trick to smoking *Salvia divinorum*?

A. Please read "[How to achieve effects from smoked Salvia divinorum](#)". It is best to smoke the leaf material in a pipe (not a cigarette). Salvinorin A has a relatively high vaporization temperature, and with a pipe you can draw a flame directly onto the leaf material so that it burns quite hot. It is very important to hold the smoke deeply in the lungs for a good 20 - 30 seconds before exhaling. This allows time for salvinorin A to be absorbed from the smoke. If one exhales too quickly, much of the material will be wasted. The level of effects you achieve depends on the amount of smoke inhaled and absorbed within about a 2 minute period. Within 2 minutes, you should be able to take 3 big hits (holding each one in for 20 - 30 seconds). The body metabolizes salvinorin A quite rapidly, so if you want to increase the effect by smoking several hits, you need to ingest the smoke faster than it is metabolized. If you pause too long between hits, the duration will be extended, but the intensity of effects won't increase.

Q. How do I smoke salvinorin A fortified leaf?

A. The standardized salvinorin A enhanced leaf is very easy to use. Place the amount that you intend to use in the bowl of a small pipe. Since the leaf may be very finely crumbled, the pipe should be fitted with a fine-mesh screen in the bottom of the bowl to prevent small particulates from getting into the pipe-stem and being inhaled. When you

are ready, first take a deep breath of fresh air, then exhale to empty your lungs, then immediately apply a flame to the leaf material and inhale the whole dose of smoke in one lungfull. It is important to hold the lighter flame immediatly above the material and to draw it down into the leaves as you inhale. The leaf must be heated to a relatively high temperature in order to vaporize the active principal. As long as the flame is drawn down into the leaf, it will burn the leaves at a high enough temperature. It is very important to hold the smoke deeply in your lungs for a good 20–30 seconds before exhaling. It takes time for salvinorin A to condense out of the smoke and be absorbed by the lungs. If you exhale too soon much of it will be wasted.

Q. Do I need a special kind of lighter to smoke salvinorin A fortified leaf or Salvia divinorum leaves?

A. An ordinary lighter or match is quite hot enough to vaporize salvinorin A and should be quite adequate for smoking salvinorin A fortified leaf products. An extra hot flame, such as that produced by a micro-torch, will simply cause more rapid vaporization and combustion. This can be an advantage when smoking plain Salvia divinorum leaves, because it is usually necessary to smoke a relatively large amount of leaf in a short amount time to achieve strong effects.

Q. Can the standardized salvinorin A fortified leaf products be taken orally/sublingually?

A: In theory, yes, but since sublingual absorption is not very efficient in this form, you would need to use a dose about 30–40 times larger than the smoking dose. From an economic point of view, it makes far more sense to use Sage Goddess Emerald Essence for sublingual use. Save the standardized salvinorin A fortified leaf for smoking, since the primary benefit of the standardized extracts is that they substantially reduce the amount of smoke one needs to ingest.

Q. Is it true that it requires several attempts, before one begins to experience the full effects of Salvia?

A: Many people report that they became more sensitive to the effects of Salvia after they had tried it several times. Apparently it may take a few exposures before one becomes fully sensitized to Salvia's effects. I don't know why this should be the case, but I've heard it from so many people that am convinced this is a real phenomenon.

Q. I've followed all the advice, but I don't seem to be able to achieve strong effects, why is this?

A. Approximately 10% of people are unusually insensitive to salvinorin A. Most of these people can achieve a satisfactory level of effects by using a higher than average dose. Some people require a dose several times higher than average. Be very cautious when experimenting with higher than average doses. Doses should be increased in gradual increments until one find the level of effects that interests you.

Q. Is there any way to extend the duration of the effects of smoked *Salvia divinorum*?

A: salvinorin A does not produce a tolerance effect, so you can extend the experience by simply smoking more as soon as the effects begin to fade. You can also ease into the experience by starting with a small dose and following it immediately with a "booster" dose.

Q. What is vaporization and how does it differ from smoking?

A. Vaporization consists of heating pure salvinorin A, extract, or powdered leaf to a high temperature without igniting it. The temperature must be high enough for at least some of the salvinorin to temporarily become a gas (vapor). These vapors, mixed with the aerosol the vapors condense to and air, are inhaled. Like the smoke from burning Salvia leaves, the products of vaporization contain salvinorin and other volatile products, either as gases, or as an aerosol of small condensed droplets. Unlike smoking, vaporization does not produce ash particulates, or oxidation products such as carbon monoxide. Inhaling vapors is probably somewhat less damaging to one's lungs than is inhaling smoke; but it cannot be considered free of all health risks. Your lungs evolved to inhale clean air, not hot vapors.

Q. How is vaporization done?

A. There are not yet commercial vaporizers optimized for smoking Salvia. Salvia leaf, extract, or salvinorin can be vaporized on heated aluminum foil and inhaled with a straw. Alternatively, homemade vaporizer units can be constructed, or units designed for consumption of cannabis or tobacco can be used. Many commercial units are either not hot enough (won't vaporize) or too hot (will carbonize) for optimum vaporization of salvinorin.

Q. Is vaporization strong?

A. Of course it depends on the dose, but it can be unbelievably strong! Dangerously so!. Since very little smoke is produced with this technique, it is possible to inhale a very large dose with very little effort. At large doses, one may temporarily lose all awareness of who one is, where one is or what one is doing. Falls, fires, injuries etc. can easily occur. If you will be vaporizing it is **ABSOLUTELY ESSENTIAL** that a sitter be present to protect you from injury.

Q. How far can one go on vaporization?

A. Level 6. You can pass out.

Q. So vaporized crude leaf powder can take you as far as pure salvinorin can?

A. Yes. To the point of general anesthesia.

Q. How long do vaporizer trips last?

A. Usually less than 1/2 hour.

Q. How quickly do they take effect?

A. Within seconds of inhaling a lung full of vapor. The first few inhalations often contain no salvinorin as the unit is not yet hot enough. Once salvinorin is inhaled you have only seconds to lie down in a safe place before you become incapacitated!

Q. Is vaporization a good way to go?

A. NO! Definitely not with present day vaporizer designs. Perhaps in the future a vaporizer will be designed specifically for Salvia use which consistently delivers just the dose one is seeking. But using present day designs one goes too far, too fast. Injuries and fires can easily occur. There's nothing desirable about passing out. Instead of being able to linger at the interesting moderate trip levels of 3 and 4, you are blasted into a maximum intensity trip for which you will have little subsequent memory, and then it's all over. If you want to get completely smashed instantly vaporization will achieve that, but if you want a dialog with a 'teacher plant', just smoke leaves, or better yet take Salvia orally.

Q. How about oral use?

A. Oral use by means of chewed and swallowed leaves, or by means of a water-based Salvia drink are the traditional methods of use by the Mazatec healers. These methods have much to recommend them including safety and suitability for learning from the 'teacher plant'. When Salvia leaves are chewed and held in ones mouth a long time, salvinorin is absorbed directly by the tissues lining the mouth. Swallowed Salvia is much less effective, although the traditional Mazatec water-based drink, which is swallowed, is effective if enough leaves are used in its preparation.

Q. Does oral Salvia work as fast as smoking?

A. Definitely not. When ingested orally, the first effects begin in 10 -20 minutes. The effects build to a peak fairly quickly, reaching a plateau which can last anywhere from 30 minutes to one and a half hours. The effects then gradually subside over an additional 30 minutes to one and a half hours. From beginning to end, the entire experience can last anywhere from one to three hours. Best not to drive for at least several more hours - just in case your reflexes or judgement are impaired longer than you think they might be.

Q. What method of ingestion produces the best effects: Smoked or oral?

A: Different people have different preferences. You should experiment with both methods and find your own preference. Smoking provides a relatively short, but potentially very intense experience, whereas sublingual absorption provides a substantially longer lasting and somewhat more gentle experience.

Q. What is the quid method?

A. A quid is a rolled up cylinder of fresh leaves. The quid method traditionally uses fresh Salvia leaves, large ones if available. Rehydrated previously dried leaves can be used if fresh ones are unavailable; there seems to be little loss of strength due to drying and rehydration. The quid method brings about a fine trip that lasts somewhat longer

than a smoking trip does. Unlike smoking, the quid method does not damage lungs. Unfortunately the quid method does not work for everyone. And some find the quid method to be unpleasant.

The following is a recipe for using a large dose of leaves by the quid method. It can produce a very strong trip.

Note: This recipe calls for 16 leaves which is a large dose. A smaller dose would be safer for novices, using fewer leaves is especially important if exceptionally strong leaves (e.g. commercially available Hawaiian leaves) are being used.

Method: Make two quids of about 8 leaves each. Chew the first quid for 15 minutes, chewing once every 5 to 10 seconds. Keep the quid under your tongue between chews as this maximizes sublingual absorption. Swish the saliva around your mouth from time to time. Do not swallow or spit unless necessary. After 15 minutes of chewing, spit out the remains of the first quid. Now, if you are not already as high as you want to get, begin the second quid. Chew this exactly like the first for 15 minutes. When that 15 minutes have gone, spit out the quid. Of course if you feel you have reached the level you want, just spit out the quid before you get higher than you want to. A few minutes after you spit out the quid you will start coming down. During quid chewing, have a bowl handy for spitting into. Make sure it is a bowl that won't tip over, as you will get pretty uncoordinated! Keep a towel handy in case you drool. The taste of chewed leaves is unpleasantly bitter but most people won't vomit. However, keep that bowl handy!

Q. Is there a safe way of increasing the effect of chewed quid?

A. The effect of chewed quid can apparently be potentiated just by using mouthwash! Do not add the mouthwash to the leaves. Instead, just before putting the quid in your mouth, rinse your entire mouth out thoroughly (for at least 30 seconds) with a mouthwash that contains both menthol and alcohol. Cool Mint Listerine® works well. This will noticeably increase the effect of chewed leaves. This effect makes pharmacological sense, as it is known that a mixture of alcohol, water, and menthol increases the permeability of mucous membranes to various drugs. Presumably it is increasing the rate of salvinorin absorption. It is possible that other ingredients in the mouthwash, such as eucalyptol may also be contributing to this effect. Another technique, which may be helpful, is to lightly brush the interior surfaces of the mouth with a toothbrush. This removes a layer of dead cells and consequently seems to improve absorption. If you will also be using the mouthwash technique, it is probably best to do the brushing first.

Q. What's Salvia honey slurry?

A. Recipe for Salvia honey slurry: Ingredients: 5 grams of finely powdered dried Salvia leaf; 1 tsp. McCormick Peppermint extract (80% alcohol); 4 tsp. honey that was first warmed in a microwave oven. Preparation: the leaf powder is put into a teacup, add the peppermint extract, then the honey. Mix until a uniform slurry is formed. Use: lie down

on a couch or on the floor on pillows, dim the lights, and slowly spoon the mixture into your mouth, one spoonful at a time; get it under your tongue and in contact with the entire lining of your mouth. When your mouth becomes full of saliva swallow and spoon in the next spoonful of honey slurry. Over a 30 minute period slowly consume all the honey, keeping it in contact with your oral mucosa as long as possible. Expect a mild gentle trip, not a very strong one.

Q. What's a sublingual extract?

A. These are extracts designed for sublingual absorption. The are held beneath the tongue so that the active principal is absorbed into the sublingual mucosa and from there into the bloodstream. The duration and quality of the experience produced is equivalent to chewing fresh leaves using the quid method. One type of extract that may be used in this manner is called a "soft extract". Soft extracts are tar-like in texture; they are effective for sublingual use, but very large amounts must be used because they are not absorbed very efficiently. More information about soft extracts is available in section XIII [Processing plant material](#). Various liquid extracts are also effective for sublingual use. At present the only commercially available sublingual extract is "[Sage Goddess Emerald Essence](#)". This is a particularly effective, ultra-concentrated, refined tincture that is prepared using a unique new separation process developed by Daniel Siebert. This product is the most effective and reliable form of *Salvia divinorum* for oral use. It is available from [The Sage Wisdom Salvia Shop](#).

Q. What's Salvia elixir?"

A. A sweetened aromatic alcohol water extraction of Salvia leaf. It is held in the mouth for 1/2 hour to allow salvinorin to be absorbed

Q. How is it made and used?

A. Recipe for Salvia peppermint elixir: Note: this extraction uses whiskey, rum, or vodka. **DO NOT USE POISONOUS DENATURED ALCOHOL**. Ingredients and method: powdered Salvia leaf (all you can spare) in a quart Mason jar. Barely cover the powder with whisky, vodka, or rum, the higher the proof the better. Close the jar. Shake every 15 minutes for 2 hours minimum. (For stronger elixir let it sit in contact with the leaf powder for days.) Pour off the Salvia / whiskey mixture, filtering it through a fine mesh spice bag (the type chefs use for Bouquet garni). Squeeze the wet powder through the bag, saving as much of the Salvia saturated whiskey as possible. The whiskey (which is chemically a mixture of ethanol and water) has extracted the salvinorin A, so you now have an extract containing salvinorin. Add 1 capful of McCormick's Peppermint Extract (to make the brew both more palatable and more potent) to 1 oz. of the Salvia extract. What you now have is an ethanol/water/menthol/salvinorin delivery system. The menthol in the peppermint extract probably helps transport salvinorin across the oral mucosa, thereby maximizing the amount of Salvinorin that enters your blood stream. Sweeten with a little honey or sugar. You will need to dilute the elixir with an equal volume of water just prior to use

in order to avoid mouth irritation. To use, hold in your mouth and swish it around for 30 minutes. Hold as much in your mouth as you comfortably can (about 2 oz.)

Q. Will cooked Salvia have any effect?

A. Yes. For some people, but usually the effect will be quite mild, only just above threshold level. Here is a report of an experiment and recipe that provided a pleasant mild trip (level 2 to level 3 on the S-A-L-V-I-A scale Materials:

- 4 freshly picked very large leaves from good plants were cut into strips. The leaf material weighted 9.92 G.
- 4 tsp Extra Virgin Olive Oil
- 1 large clove of garlic , coarsely sliced
- 1 tsp. soy sauce
- a small piece of frozen ginger root (about 2 cm. wide and 1/2 cm. long)
- a pinch of ground chili pepper

Preparation: The cut up leaves were mixed with the sliced clove of garlic and the extra virgin olive oil and this mixture was stir fried in a wok-style fry pan. The pan had a Teflon lining and stir frying was done with wooden spoons (thus the leaves were not in contact with metal while being fried (it is not known if this makes a difference). The mixture was stir fried until the garlic slices turned medium brown darker than golden brown but definitely not charred). Once the garlic had turned brown the leaves, garlic and the oil in which the mixture had been fried were all transferred to the refrigerator for later consumption. Note: the time the leaves spent sitting in the oil in the refrigerator may have aided salvinorin extraction into the oil phase. Several hours later the bowl was taken out of the refrigerator, the frozen ginger root was grated onto it and a pinch of chili powder and 1 tsp. of soy sauce were added for flavoring. These were mixed and the entire contents of the bowl, including all the oil was eaten (not kept under the tongue like a chewed Salvia quid but rather eaten like any food would be). The sauté was consumed on an empty stomach (which may have been necessary for its rapid absorption). A repeat of this experiment during which the fried leaves were not refrigerated prior to consumption yielded only a minimal trip (level 1 to 2) for one individual and no trip for a second person. There have been other reports of both success and failure from sauteed Salvia. It is possible that one reason not everyone is successful in obtaining a Salvia effect from the sauté may be differences in leaf potency. With weaker leaves a higher dose would be required. If you try this, eat all the oil the leaves were fried in along with the leaves, as the oil probably contains much of the salvinorin. Probably the best results (assuming average quality leaves eaten by an individual with average sensitivity to Salvia) would be obtained with a dose of about 15 to 20 grams of fresh leaves sautéed as described Comments: The trip I experienced the first time was level 2 to 3 and the second time level 1 to 2. The recommendation to increase the leaf dosage was made in the interest of being able to achieve a somewhat higher level for myself and a discernible level for someone less sensitive to Salvia than I am. I believe I am more sensitive to Salvia than about 2/3 of people.

VII. THE PLANT AND ITS CARE

Q. What type of plant is *Salvia divinorum*?

A. *Salvia divinorum* is a type of sage. Generally, sages belong to the genus *Salvia*. There are about 900 different *Salvia* species, including many ornamental garden sages and *Salvia officinalis*, the common cooking sage. *Salvia* is a genus in the mint family (Lamiaceae) *Salvia divinorum* is literally the sage (*Salvia*) of the diviners (*divinorum*). The plant has a characteristic weak 'mousy-but-minty' aroma. It is a native of a small area in Oaxaca, Mexico, growing in mountainous lands where the Mazatec Indian people dwell.

Q. How does the plant grow?

A. *Salvia divinorum* is a semi-tropical perennial. That means that it can grow back year after year but only if it is not exposed to frost. It is a green plant with large leaves and a distinctive thick hollow square green stem. It can grow several meters high if conditions are favorable. When it grows high enough the branches will bend or break and may root if they come in contact with moist earth. Although *S. divinorum* can flower under natural lighting conditions (it has white flowers with purplish calyces), it only rarely sets seed, even when carefully hand-pollinated, and when it does the seeds are not very fertile. Experience has shown that plants grown from seed are often lacking in vigor. The plant is typically propagated by cuttings. The leaves are oval, weakly serrated and can be quite large (up to 9 inches length). The leaves are often emerald green and are covered with a fine coating of very short hairs giving the leaves a satin-like velvety appearance in certain lights. The plants are water loving but grow best in partial shade in well-watered but well-drained soil.

Q. Is it easy to grow *Salvia*?

A. Yes. *Salvia* can be grown indoors in any climate. It makes a beautiful house plant.

Q. Can I grow it outdoors?

A. That depends on where you live. If you live in a humid semi-tropical climate, with well-drained but well-watered somewhat acidic soil with a high humus content, *Salvia* will thrive. If you live in a more northern (or arid) climate you can still grow *Salvia* outdoors, weather permitting, but you may have to do it with some care, making sure it is protected from frost, watered frequently, and misted as needed when low humidity conditions prevail. *Salvia* will not tolerate frost or drought. It can be grown outdoors in pots which can be brought indoors when it is cold (below 40 degrees Fahrenheit).

Q. How often should it be watered?

A. Often. *Salvia* will tell you when it is getting too dry - its leaves will droop. Be sure to water it at the first sign of mild drooping, do not let the plant become flaccid. The soil should drain but should be kept moist.

Q. What soil mixture should I use?

A. Commercial potting soil will do. Make sure the pot is large. It should have a drain hole. Placing gravel (or broken up chunks of styrofoam) in the bottom of the pot will help promote drainage and thus discourage root rot.

Q. Does it need fertilizer?

A. Yes it will. There is no one fertilizer that is clearly best. Satisfactory results can be achieved with different products. Some of them are: Scotts All-Purpose Plant Food 18-13-13 lightly sprinkled on the soil about once every six weeks; fish emulsion (but this is not for indoor use as it stinks); Miracid added to the water once a week (1/4 tsp. per gallon); Peters Professional Soluble Plant Food (15-30-15) 1/4 tsp. to gallon of water once per week.

Q. How much sunlight is needed?

A. Salvia divinorum can do well in a variety of different lighting conditions. It does best with a few hours of partial sunlight a day. It can do well grown indoors near a window. It can survive full sun if kept well watered and misted frequently. It can also handle moderately deep shade.

Q. What pests are a problem?

A. Too many! Whitefly is a big problem for greenhouse grown plants. Aphids, slugs, caterpillars, thrips, spider mites, and scale insects can also damage your plants. Root rot and stem rot can be problems. Fungal spots can appear in leaves. It is not known which plant viruses attack Salvia divinorum but many attack other sages.

Q. What is the best way to deal with pests?

A. Your garden hose is your best friend in fighting pests. Spray the leaves hard enough to blow the pests away but not hard enough to damage the leaves. Don't forget to spray the undersides of the leaves too. If the hose method does not do the trick then more specific methods will be needed. Aphids and scale insects can be removed with a cotton swab dipped in isopropyl (rubbing) alcohol. Slugs can be kept away by growing in pots on a raised deck or palette. Beer can also be used to attract and drown slugs. Set a saucer of beer in a slight depression in the ground; the surface of the saucer should be flush with the soil so slugs can get in. Slugs and snail are said to be repelled by copper surfaces. Copper foil strips can be placed as a protective barrier on the soil surface around plants. Keep them a distance away from the plants. Do not let the copper touch the plants as it may kill them. Snail pellets (effective against both snails and slugs) are available from garden stores. They are poisonous. Spider mites can be controlled by dissolving Castile soap in water and spraying the leaves, including the underside. Repeat at two week intervals for three applications. Caution: there have been reports of soap damaging leaves. Using a garden hose outdoors, or a mister indoors, to spray both tops and bottoms of the leaves may be able to control spider mites without using soap.

Q. How can I propagate Salvia?

A. Salvia divinorum is propagated by cuttings, not by seed (except very rarely). Cuttings must be rooted either in water or directly in soil. Here's how:

1. Rooting in water: Salvia can be rooted simply much like the common ornamental Coleus (they are closely related). Cut off a branch (4 to 8 inches long) bearing some leaves. Immediately place it in about 1.5 inches of water in a small water glass. Only one cutting is to be put in each glass, so if rot develops in one cutting it cannot spread to another.

It is best if the branch is cut back to just below a node since nodes are the places from which new roots are most likely to develop. While it is not necessary to cut make the cut here, doing so has the advantage that there will be no stem material dangling in the water below the node. This is important as the cut stem end is more likely to start to rot than is a node.

Make sure the cutting is made with clean shears or knife so the cut stem does not get attacked by microorganisms that cause stem rot. Cut off all the large leaves, but leave a few small leaves. Place a clear glass jar (or clear plastic bag) upside down over the plant to serve as a humidity tent. Place where it will get some sunlight. Change the water daily. It may be a good idea to use cooled boiled water. If your water is chlorinated boiling will drive off chlorine. Non-chlorinated water may be contaminated with plant pathogens, but boiling should kill these. Rooting in water this way is successful about 3/4 of the time (the rest of the time stem rot occurs and kills the cutting).

In two weeks roots will start to develop. When they are about 1/2 to 1 inch long transplant to potting soil in a well-drained pot. Continue to cover with a clear glass jar or clear plastic bag to serve as a humidity tent until the plant appears vigorous.

2. Rooting in Soil: Salvia can be rooted directly in soil. This method, a modification of the one posted to the list by Todd Pisek, works quite well. Materials needed: potting soil, two disposable plastic cups, some Rootone powder (this is a rooting hormone mixture that also contains a fungicide and is available at any nursery), a 1 gallon Baggie™ brand storage bag, and a rubber band. Have water handy. Method: Punch some small holes in one of the cups for drainage. Fill the cup 1/3 the way up with potting soil. Fill the cup another 1/3 with soil. Using a pencil or a finger make a hole in the soil about 2 inches deep. The soil is now ready for your cutting. You must now prepare the cutting. With a clean shears cut off a length of stem from a healthy plant. Leave a few leaves (small ones) on top. Harvest the larger leaves from the cut-off stem. Immediately after cutting the stem, place it in clean water. Cut it back to just below a node, as roots will develop from the node. Keep the cut surface wet. Place the cut surface at about 1 inch above the cut into rooting powder. Shake off the excess. Rooting powder is somewhat toxic, so wash your hands after handling it. Place the powder-coated cutting in the hole in the soil. Gently push the soil around the cutting, holding it in place and filling in the hole. Water the planted cutting until some water runs out the

drainage holes. Place the cup with the plant in it into the second plastic cup (which is there to catch any runoff water). You may want to put a small piece of wood or plastic in the outer cup to act as a spacer thereby allowing enough space for excess water to drain. Place a 1 gallon clear plastic bag over the rooted cutting, using a rubber band to hold it in place. The rubber band should be outside the bag and the bag outside both cups. The Rubber band holds the bag against the cups. As the plastic bag acts to conserve moisture frequent watering is not required. After several weeks you can transplant the now-rooted plant to a larger pot.

VIII. SALVIA DIVINORUM'S INTERESTING RELATIVES

Q. Are there other psychopharmacologically active Salvia species?

A. Yes. It appears that number of different Salvia species have different forms of psychoactivity. In addition some other members of the mint family (to which genus Salvia belongs) are psychoactive ('psychoactive' means that a substance effects mood, alertness, thinking, emotion, or perception, most psychoactive substances are not hallucinogenic), for example there is a Central Asian mint known as 'intoxicating mint' (*Lagochiles inebrians*) whose leaves are reportedly toasted and then brewed into a sedative tea.

- There is an unclassified Salvia species called "Xiwit" by the Nahuatl people of Sierra de Puebla, who use it as a dream inducer. It apparently is not *S. divinorum*.

- The many strains of the common cooking sage *S. officinalis* contain thujone which (along with alcohol) is the main ingredient that gives absinthe its characteristic psychoactivity. Thujone (also found in wormwood and juniper) is believed by some to cause brain damage. Best to use cooking sage as a condiment --- but not as a drug.

- Another quite different Salvia species of great interest is *S. splendens*, frequently grown for its showy flowers. Claude Rifat and Kevin Brunelle were the first to post on its alleged psychoactivity. Other list members subsequently reported psychoactivity of a tranquilizing or sedative type if it is either smoked or taken by the chewed/sublingual route. Both leaves and flowers have been reported to exhibit this tranquilizing activity. However its purported psychoactivity has been called into question and may turn out to be an example of placebo effect. A double blind placebo controlled study of *S. splendens* was conducted by Daniel Siebert using as subjects volunteers from the Salvia e-mail list. Analysis of the results indicated there was no statistically significant difference between the mental effects of the placebo herb (*Viola odorata*) and of *S. splendens*. This held true regardless of whether the herbs were taken sublingually, or smoked. Although 'lack of evidence of difference' is NOT the same as 'evidence of lack of difference', at this point, the burden of scientific proof is on anyone claiming that *S. splendens* is more psychoactive than placebo.

IX. SALVIA AS AN ENTHEOGEN

Q. I have seen Salvia referred to as an 'entheogen'. What's that?

A. The word comes from the Greek, loosely translated as "making possible (contact with) the divine within (oneself)". Drugs (and drug plants) which can transport their user to mystical states of consciousness are often called entheogens.. More properly entheogen refers to a type of drug usage, not a type of drug. Salvia CAN be used as an entheogen. It is used as such when taken as part of a serious spiritual quest; but most 'Western' Salvia usage would not qualify as entheogenic. The issue of the spiritual/religious use of Salvia has been a hotly debated on in the Salvia e-mail list --- to say the least! Perhaps one of the few statements that most list members can agree upon regarding entheogenic use of Salvia is "Some people take Salvia with the intent of having a spiritual or religious experience and claim to be able to achieve one from it". Beyond that the issue gets extremely controversial dealing with such questions as what are true religious beliefs, the nature of: God./Goddess, gods, spirits, void, consciousness, the soul, proper methods of meditation, spirituality etc. These are questions about which no consensus is possible.

X. ABOUT SALVINORIN (and related substances)

Q. What's in Salvia that is so strong? Is it an alkaloid?

A. Salvia contains a substance called salvinorin A. Salvinorin A is the most potent naturally occurring vision inducer. Salvinorin A is not an alkaloid--its molecule contains only carbon, hydrogen and oxygen atoms. Technically it is a neoclerodane diterpenoid. Salvinorin A is a unique vision inducing substance, of great power. It is NOT an analog of any other drug.

Q. Just how strong is it?

A. When vaporized and inhaled, doses of about 250 micrograms (that is 250 millionths of a gram) can have threshold effects and doses of 1 milligram will have extreme effects. Sensitivity varies greatly from person to person. Salvinorin is most effective when inhaled as smoke or vapor and least effective on a milligram basis when swallowed.

Q. Are there other psychoactive substances present in Salvia?

A. Possibly. A substance known as divinorin C has been recently reported by Valdés *et. al* to be behaviorally active in mice at even lower dosage than salvinorin A. Divinorin C is closely related chemically to salvinorin A and is present in his Salvia extracts in 1/9 the concentration of salvinorin A. It may contribute to the psychoactive effects of Salvia leaves. Divinorin C has never been bioassayed in humans due (among other reasons) to the difficulty in preparing pure samples in significant quantity for such bioassay. A few other salvinorin like compounds are known to be present in Salvia and may also contribute to its psychoactivity. However, salvinorin A is the only *Salvia divinorum* compound presently known to be psychoactive in humans.

Q. Can salvinorin A be used safely?

A. The primary danger in using refined salvinorin A is overdose. It can only be used safely if the dose has been measured precisely. It is active in extremely minute quantities - so small in fact that a dose could easily fit on the head of a pin. Quantities this small can only be accurately measured using an analytical balance. Such weighing equipment usually costs two or three thousand dollars. **NEVER ESTIMATE A DOSE OF Salvinorin A VISUALLY. IT SHOULD ALWAYS BE WEIGHED.** Don't experiment with this material unless you are 100% certain that the dose has been measured accurately. To learn more about the potential dangers of salvinorin A, go to the following URL: <http://sagewisdom.org/caution.html>

Q. Is it possible to estimate salvinorin content of leaves without having an organic chemistry lab at one's disposal?

A. Yes it can be done in a crude fashion. If you have a gram scale weigh the material and assume that there is APPROXIMATELY 3 mg salvinorin per gram of ordinary (unenhanced) dried leaf. If you lack a gram scale (it would be a good idea to buy one) you could

use volume measure and assume 1.37 G of powdered leaf per level teaspoon.

Roughly (but only roughly) this gives:

1 level tsp. dried leaf powder = about 4 mg salvinorin

1/2 level tsp. dried leaf powder = about 2 mg salvinorin

1/4 level tsp. dried leaf powder = about 1 mg salvinorin

1/8 level tsp. dried leaf powder = about 1/2 mg salvinorin

These figures are based on a weighing of powdered leaves which gave a reading of 1.37 grams per tsp. and on an estimated salvinorin content of 3 mg salvinorin per gram of dried leaf. This estimate is consistent with the comment of Leander Valdes III that based on his research he "would guess the salvinorin A content in dried leaves to be at least 2.5 - 3.0 mg/g and possibly higher." These figures are not exact - they will depend on packing density. Also, leaf quality and salvinorin concentration will vary. Leaf samples analyzed by John Gruber ranged from 0.86 mg - 3.94 mg salvinorin per gram of dried leaf with an *average* concentration of 2.45 mg per gram.

Q. How can I make salvinorin?

A. You can't. Salvinorin has not been synthesized yet and synthesis would be an extremely difficult if not impossible undertaking for even the most skilled chemist.

Q. How can I extract it?

A. Extracting pure salvinorin is not a task to be undertaken in your home. If you are a reasonably skilled organic chemist and have access to an organic chemistry lab and fairly sophisticated equipment it is possible to extract pure salvinorin from dried leaves. If you intend to use it it will be necessary to weigh out dosage very precisely. Ordinary balances are not accurate enough for this task. The accuracy of the balances used should be to within 10 micrograms (that's micrograms not milligrams) **WARNING:**

Attempts to extract salvinorin by amateurs are fraught with danger including solvent toxicity, fire, explosion and overdosing. This FAQ will not give recipes telling how to extract salvinorin; but if you are willing to study source material the procedures are published in the scientific literature.

If you want to learn about salvinorin, its effects and its chemistry a good place to start is: J Psychoactive Drugs 1994 Jul;26(3):277-283 Salvia divinorum and the unique diterpene hallucinogen, Salvinorin (divinorin) A. Valdes LJ 3rd.

also see these:

Siebert DJ. 1994. Salvia divinorum and salvinorin A: new pharmacologic findings. *Journal of Ethnopharmacology*. June;43(1):53-56.

Ortega, A. et al. 1982. Salvinorin, a new trans-neoclerodane diterpene from Salvia divinorum (Labiatae). *Journal of the Chemical Society Perkins Transactions*. I 1982: 2505-2508.

Valdés III, L.J. et al. 1984. Divinorin A, a psychotropic terpenoid, and divinorin B from the hallucinogenic Mexican mint Salvia divinorum. *Journal of Organic Chemistry*. 49: 4716-4720.

Q. How does salvinorin work in the brain?

A. Nobody knows.

Q. In what parts of the brain does it act?

A. This is not known for sure but from the subjective and behavioral effects it can be surmised that salvinorin is almost certainly affecting the limbic system, and may be affecting somatosensory (parietal lobe), cerebellar and vestibular function as well.

Q. Does it act at any receptors where other drugs act?

A. In 1993, Daniel Siebert sent a sample of salvinorin A to Dr. Dave Nichols at Purdue University, USA. Dr. Nichols was involved in an NIMH funded research program, which enabled him to have the material exhaustively screened by the commercial bio-receptor screening service, NovaScreen™. The screening results showed no significant competitive inhibition of reference target compounds at any of the 40 receptor sites tested and exhibited no inhibitory effect on MAO-A or MAO-B. The receptor sites tested included those effected by most other major psychoactive drugs. (Siebert, D.J. 1994. Salvia divinorum and salvinorin A: New pharmacologic findings. *Journal of Ethnopharmacology*. 43: 53-56.)

Some people claim that the effects of low doses of salvinorin are similar to Cannabis and have suggested the possibility that like THC, salvinorin A might bind to the anandamide receptor site (CB1). This site had not been looked at in the NovaScreen™ study, so in 1998, Siebert submitted a sample of salvinorin A to Dr. Raphael

Mechoulam at the Hebraic University, Israel. Dr Mechoulam is one of the world's foremost authorities on the chemistry of Cannabis. He tested the sample for activity at this site and found it to be inactive.

Recently, in April of 1998, Siebert sent a sample to Dr. Jace Callaway at Kuopio University, Finland. Dr. Callaway tested both the pure salvinorin A and a crude methanol extract of the leaves for binding at the MK-801 site. This also came up negative.

As of now, the mechanism of action for salvinorin A is still unknown. Discovering which receptor site(s) it binds to will be an important step toward developing an understanding of how this substance works in the brain. Once this is know, it will be possible to look for endogenous ligands for these receptors, so that we can understand in what way salvinorin A may relate to naturally occurring human biochemistry. It is possible that salvinorin A does not act directly on any receptor site, but rather acts to release some endogenous neurotransmitter from synaptic storage vesicles.

XI. DANGERS AND PRECAUTIONS

Q. Does Salvia cause a hangover? Are there any after-effects?

A. Most people do not feel unpleasantly hungover after using Salvia. A few people do report a mild headache, bronchial irritation, insomnia or irritability. These symptoms seem to be reported more often by smokers than by quid chewers, and perhaps might be due to some combustion products, such as carbon monoxide rather than to salvinorin.

Q. For how long after using Salvia is a person's ability to drive impaired?

A. Most people feel they can drive safely by 3 hours after smoking Salvia, or 4 hours after chewing it. Many believe they can safely drive even sooner than this. The duration of impairment after drinking the infusion might be up to 8 hours. But studies of the duration of impairment, after taking Salvia by any route, have never been done. Therefore it is a good idea to be extra careful when driving for a couple of days after using Salvia.

Q. Does Salvia cause any physical damage?

A. There are no known health problems from oral Salvia use. However, it is known that smoking tobacco is damaging to your lungs and may cause cancer, emphysema, bronchitis, stroke and cardiovascular disease. These toxic side-effects of tobacco smoking are not due mainly to nicotine but rather to combustion products (tars and carbon monoxide), which are present whenever any type of plant material (e.g. Salvia) is smoked. Common sense will tell you that smoking Salvia, or any material, can be bad for your health. It is not known if Salvia can cause birth defects, but it is prudent to assume that it could.

Q. Is Salvia addicting?

A. Although Salvia is not believed to be addicting, it should be borne in mind that some very habit forming drugs including tobacco, heroin, cocaine and benzodiazepines also were initially thought not to be addicting. No physical dependence on Salvia or salvinorin has been reported. The usual usage pattern is not one of daily use. Indeed such would be quite unusual. Withdrawal symptoms have not been reported.

Compulsive use is not something that SALVIA list e-mail members or others are reporting. Episodes of excessive dosage have occurred, but such abuse is likely to have very unpleasant consequences (panic, injuries, fires, falls, severe social humiliation, etc.) and is unlikely to be repeated. It is quite unlikely that anyone using Salvia in the traditional fashion (by chewing quids of leaves occasionally) will become 'addicted'.

Whether this freedom from addictive risk also holds for smoking leaves, smoking extract enriched leaves, vaporizing powdered leaves or vaporizing salvinorin is something only time will tell. Prudence and general health concerns would advise not inhaling Salvia smoke (or vapor) into your lungs often.

Q. Can you take a fatal overdose?

A. No case of fatal salvinorin poisoning has been reported. The human oral lethal dose is not known but is believed to be extremely high. Leander Valdes, III provided the following information for inclusion in this FAQ regarding acute toxicity studies in mice: "I tested Salvinorin A intraperitoneally in mice at very high doses and it appeared to be not very toxic. This was long before the compound was being taken orally and it was testing about as potent as mescaline in the assay I was using. In light of the extreme potency of the compound, I think it quite possible and probably very likely that it was not being well absorbed. I had it in a mix of corn oil, tween 80 (a fancy emulsifier) and water. Dissolving the compound in solvents such as ethanol, acetone or DMSO probably delivers quite a bit more drug to the body (I didn't use them because I wanted an inactive vehicle). "

Swallowed salvinorin is not well absorbed. The chances of inadvertently swallowing a lethal overdose of an oral preparation of leaves, slurry or elixir are extremely low.

If salvinorin is inhaled as multiple inhalations of leaf smoke or vapor one could reasonably expect to pass out before he/she could take a lethal overdose. But significantly, nothing is known about the toxic effects of smoking truly massive 'single bolus' doses of pure salvinorin, such a practice might be quite dangerous, and should certainly be avoided.

Although fatal poisoning from Salvia divinorum appears to be very unlikely to occur; there is another type of lethal overdose --- one that kills not by poisoning but by impairing judgment and survival instincts and causing fatal injury. If you smoked salvinorin and then walked out of a ten story window you would be very dead indeed. That's why sitters are needed when smoking or vaporizing high doses.

Q. When do you need a sitter?

A. Having a sitter present is absolutely essential if you are taking doses on which you may freak out, become confused, physically injure yourself, fall, set your house on fire, or act in any way harmful to yourself or others. A sitter is needed whenever a user is new to Salvia, is experimenting with a more powerful preparation than he/she has used before, or is using a more powerful deliver system than previously. Having a congenial sensible sober sitter present is an absolute must if you are trying vaporization, smoking extract enhanced leaves, or using salvinorin. Although someone who is used to Salvia and is chewing a quid, or using honey/slurry, may often choose to do it alone, anyone trying vaporization, or experimenting with extracts or salvinorin, must have a sitter present. Smoking leaves usually falls in-between in terms of risk. Use your judgment. Many people have done so without a sitter but a sitter is a good idea.

Q. What should a sitter know?

A. Above all remember that no matter how crazy the tripper gets, Salvia trips are short lived. Within an hour (usually much less) the tripper will be back in consensus reality, behaving normally. It's very reassuring to hold onto this knowledge when things seem impossibly messy. It helps to have done Salvia yourself before sitting another person. Experience with classical psychedelics may not be that helpful. The sitter should know that Salvia is different from these especially in terms of dissociative effect. Touching to 'ground the tripper' works for some trippers on drugs like LSD but may be very threatening for someone on Salvia. If you plan on touching, clear it with the tripper before the trip starts. The sitter should realize that he/she has a primary role, a secondary role, and a tertiary role.

Q. What is the primary role?

A. The primary role is to keep the person tripping safe. and keep those around that person safe. This must take precedence over all else. The main dangers to be guarded against are physical, not emotional. Your primary job is 'guardian' not psychotherapist. Do not use physical force unless nothing else will do. Use of physical force may result in the tripper or you getting hurt. It is likely to be misinterpreted as an assault. Never let Salvia be used in settings in which firearms, knives or other potentially dangerous objects are present. Keep the tripper safe from falls, head banging, sharp objects, walking through windows, wandering out into the street, open flames, hot surfaces and breakable objects. But let the tripper move about in a safe area. Do not grab or try to physically restrain the subject. Do redirect him or her. Speak softly. Take dangerous objects away. Use the minimum touching necessary (the confused subject may perceive your touching as an assault and react to the perceived danger). It is also the sitter's responsibility to handle unexpected intrusions of strangers and other awkward social situations. This may call for considerable creativity ;-).

Q. What is the secondary role?

A. To reassure and reorient. Often simple repeated explanations may help a frightened tripper, e.g. "You're safe, I won't let anything harm you." "You're just having a bad

trip, you'll feel better in a few minutes." "Your name is (subject's name), I'm (state your name) I'm your (friend, lover, spouse etc.)" . If speech is not called for, be silent. Silence is often less threatening to the tripper than trying to decipher what a sitter is saying.

Q. What is the tertiary role?

A. To help the tripper later recall the trip. There are several techniques. Use a notebook and record all the tripper's odd behavior and utterances. Later you can ask the tripper "Do you remember standing on your head and talking about a purple potato?". That may jog his/her memory about what he experienced. Another technique, if the tripper is not too far gone to communicate during the trip, is to ask repeatedly "what are you experiencing now?" A notebook, or more conveniently a tape recorder, can be used to record responses.

Q. Any safety Do's and Don'ts?

A. Common sense guidelines are:

- Choose the time and place of your trip carefully. Privacy and safety are essential.
- Choose your dose and mode of delivery carefully.
- Lie down for the duration of the trip. You're pretty darn safe in bed if you're not smoking there.
- Have a sitter (this is especially important if you are new to Salvia, taking a high dose or using an efficient delivery system such as vaporization.
- As a general rule do not mix Salvia with any other psychoactive substances. If you are quite experienced with Salvia ,and with the other substance, you might decide to ignore this advice at some point; but if you do so you are playing guinea pig. When you play guinea pig risks increase. If you decide to play guinea pig having a sitter present would be a wise precaution.
- If you are currently having mental health problems or have a history of same, don't take Salvia without first discussing it with your mental health practitioner.
- Don't give Salvia to minors, or to violent or unstable individuals.

XII. LEGAL STATUS

Q. What is the legal status of Salvia?

A. The author of this FAQ is not an attorney and cannot render a legal opinion. If you have a question regarding the legal status of Salvia divinorum or salvinorin, you should consult an attorney knowledgeable about drug law. Salvinorin is not a scheduled (controlled) substance. At this time (early 2000) people are not being prosecuted for growing or using Salvia. It is being grown by commercial greenhouses and is sold as "incense" and "dye" and often labeled "not for human consumption". Live plants are readily available from commercial greenhouses. Drug laws are often ambiguous and 'elastic' in scope. It is possible that some prosecutor might decide to go after Salvia users or suppliers. It is quite possible that in the future some crime or disaster will be

(fairly or unfairly) blamed on Salvia and that Salvia will then be declared a scheduled drug and its use made illegal.

Q. Any thoughts on how to prevent this?

A. Practice and encourage responsible use. Do not provide Salvia to minors or unstable individuals. Never use Salvia in settings in which firearms, knives or other potentially dangerous objects are present. Do not mix with alcohol. Never drive while under the influence of Salvia. Be extra careful of flames - candles, lighters, fire etc when using Salvia. Discourage mixing Salvia with other drugs. Encourage the practice of using sitters. Discourage use of pure salvinorin (except in research settings), vaporized extracts, vaporized leaves, and smoking of powerful extract enhanced leaves. Taking oral preparations and smoking unenhanced leaves are less likely to produce out of control behavior. Be careful about granting interviews. The press and media in general is often more interested in sensationalizing than in balanced factual reporting.

Q. Does Salvia divinorum show up on drug tests?

A: No. Salvia divinorum is a legal herb that does not lend itself to abuse. Therefore, there has been no incentive to develop tests for it. The active principal, salvinorin A, is not chemically similar to any illegal drug and will not produce a false-positive on drug tests that test for illegal drugs.

XIII. PROCESSING PLANT MATERIAL

Q. How could I dry leaves?

A. There are several methods which all give good results.

Method 1.) "Nature's Bounty"

Wait till the leaves die or are shed. Gather them. Place them on a plate in a room with low humidity. Wait until they are dry then store. It is not known if naturally shed leaves are stronger or weaker than picked leaves. Advantage you won't be depriving your plants of leaves it needs. Disadvantage you will have to wait until the plant is ready to make a donation to your cause. Leaves may not be in prime condition

Method 2) "Salvia Tobacco"

List-member Michael Steinmetz recommends the following: Take big leaves and place one atop another (like stacking sheets of paper). Then cut through the pile making 1/2 cm. (1/4 inch) strips. Pile these on a plate into a heap. Turn them twice daily until they are dry but not crispy. The resulting 'tobacco' is said to give a smoother smoke than thoroughly dried leaves; however is possible that this slow partial drying results in weaker leaves that may not keep as long as thoroughly dried (crispy) leaves.

Method 3) "Food Dehydrator"

Dry in a food dehydrator. A Mr. Coffee® brand food dehydrator works very well.

Drying is very fast and thorough. Dry until the entire leaves including the leaf stem are crispy. Your fingers can tell you when they are ready. Advantages: speed, thorough drying. and convenience. Disadvantages cost of buying a dehydrator.

Method 4). "Oven Method"

Place on an oven proof dish. Oven dry in an oven set at no more than 150 degrees F. Similar to method 3) although a little less convenient; however, more people have ovens than food dehydrators.

Method 5). "Calcium chloride Drying"

List-member "cystonic" recommends: Get Damp-rid (Calcium Chloride) refills and place sufficient amount in the bottom of a Tupperware container. Place a piece of aluminum foil atop the CaCl₂, and place leaves to be dried on top of foil. Curling edges is recommended as to avoid contact with the CaCl₂. Seal container, and leaves will be dry in approx. 2 days Advantage very thorough drying. Disadvantages less convenient than other methods. Slow.

Q. How should I store dried leaves and how long will they last?

A. Place them in a sealed jar away from light. A clean glass canning jar works very well (1 quart Mason jar). Storing the jar inside a kitchen cabinet or medicine chest will keep it away from light. Stored this way leaves will keep their potency for many months or even years. Storing dry leaves in a sealed jar in a freezer may give even longer shelf life.

Q. I've heard talk of Salvia extracts and I'm confused. The term seems to be used in various ways.

A. It is confusing because the term is often used to refer to various preparations derived from Salvia. Technically, in pharmacy and medicine the dictionary definition of an extract is: a solid preparation obtained by evaporating a solution of a drug. There is also such a thing as a fluid extract (or tincture), which is a concentrated liquid preparation containing a definite proportion of the active principles of a medicinal substance. The solvent usually used is ethyl alcohol or a mixture of ethyl alcohol and water. However various Salvia preparations are often referred to (loosely) as extracts.

Q. What are the advantages of using extracts?.

A. Extracts allow one to explore deeper levels than are available using plain leaf. This is particularly important for people who find that they are not very sensitive to S. divinorum. Another advantage to these products is that they are far easier to consume, since less material needs to be ingested or smoked.

Q. How safe are extracts?.

A. They are safe if prepared properly and used wisely. It is highly recommended that you have a sitter present when experimenting with any enhanced or concentrated form of Salvia divinorum. Poorly manufactured extracts, or fortified leaves may contain traces of toxic solvents or other residues. Unless standardized, the strength of these

preparations may vary. Apart from possible solvent toxicity, the main danger is from fires, falls, burns and confused behavior resulting in injury. **Extract can be quite powerful and must be used carefully.** I generally recommend that people avoid using products containing more than 15 mg. salvinorin A per gram of leaf (i.e. products stronger than 6X) unless the dose has been weighed precisely. Be sure that you know what you are doing before experimenting with extracts, fortified leaves, and standardized salvinorin A enhanced leaf.

Q. What are these so called 'extracts'? And what are they used for?

A. They include:

- Crude extract fortified Salvia leaves. When you hear of '5X extract', fortified leaf material is what is being referred to. An extract of Salvia is made using a solvent such as ethanol or acetone. The solvent, which now contains dissolved extracted material, is evaporated onto Salvia leaves, where the dissolved material is deposited. This final material, whose salvinorin content has been increased by this procedure, is often termed 'extract', although technically it should be called 'extract fortified leaves'. Fortified leaves are usually smoked, although they may be active sublingually as well. The most common product currently on the market is called "5X". It is prepared by adding the crude extract obtained from 4 units of leaf back onto 1 unit of leaf. The resulting product is thus 5 times as potent as the leaves used to produce it. This type of product is somewhat variable in actual potency, because the potency of the leaves used to produce it varies. It has a somewhat sticky feel and inferior burning characteristics due to the impure, tar-like quality of the extract. A 5X 'extract' is a final product that is 5 times as strong as the original untreated leaves. Extract fortified leaves of various strengths are available: 5X, 6X, 10X, 15X, etc.

- Standardized Salvinorin A Enhanced Leaf. This material contains a specific concentration of pure salvinorin A deposited on a small quantity of leaf material. Unlike extract fortified leaf made with crude extract, this material is enhanced with pure salvinorin A. This product is ideal for smoking, because it minimizes the amount of 'tars' and carbon monoxide that would be inhaled. Daniel Siebert sells two strengths at his '[Sage Wisdom Salvia Shop](#)':

- 1.) 'Standard strength': This has been standardized to contain exactly 15 mg salvinorin A per gram of leaf. This is roughly six times the average natural leaf concentration. One gram is sufficient for 15 - 30 uses.

- 2.) 'Extra strength': This is standardized to contain exactly 1 mg salvinorin A per 25 mg of leaf (this is equivalent to 40 mg salvinorin A per gram of leaf). Because of its strength, it should only be used if the individual doses have been accurately weighed. Since most people do not have the ultra accurate analytical balances necessary to do this, Daniel Siebert only sells this in individually packaged, pre-weighed, 25 mg. units. This only produces a tiny wisp of smoke, so it is ideal for people who want to minimize smoke ingestion as much as possible. 25 mg. is sufficient for 1 - 2 uses for a person of average sensitivity.

- **Salvia fluid extracts.** These are usually in the form of various Salvia elixirs -- sweetened alcoholic fluid extracts. Instructions for making them are included in the FAQ.
- **Sage Goddess Emerald Essence.** A particularly effective, ultra-concentrated, refined tincture that is prepared using a unique new separation process developed by Daniel Siebert. This product is the most effective and reliable form of *Salvia divinorum* for oral use. It is available from [The Sage Wisdom Salvia Shop](#).
- **Soft extracts.** This is a type of true extract. It is a semisolid material obtained by extracting Salvia divinorum leaf with a solvent and then evaporating the solvent completely. The resulting preparation is a waxy or tarry product that is not sufficiently hard to be able to be ground up into a powder. The soft extract (which may actually be fairly hard like hard wax), is not deposited on leaves. This material is quite suitable for sublingual use as a substitute for quid. The effects are similar to quid but probably will be stronger, may come on a little slower, and may last somewhat longer. The advantage over quid chewing is user comfort, as a far smaller amount of material must be put into ones mouth. Since the material is very concentrated (1/4 tsp. will produce a strong trip in many people) a large enough dose can be taken to guarantee a strong trip without the gagging that may accompany use of large quids. For example: if 1/4 tsp. is ineffective, one could take 1/2 tsp. without gagging. Basic soft extracts but can easily be prepared in a kitchen. A method of preparation is described below.
- **Hard extracts.** These can be prepared by a more complicated use of two solvents in a separatory funnel, one to remove the oils and waxes but leave the salvinorin and the other to dissolve the salvinorin. A hard extract could be ground and used as a powder. No Salvia divinorum hard extracts are being sold. Such a hard extract might be suitable for vaporization or use as a nasal snuff. Instructions for making a hard extract are not included in the FAQ.

Q. I'm not a first time user. Smoking regular leaves doesn't have much effect on me. Despite your warnings, I'd like to be able to make extract enhanced leaves. How can I do that?

A. If you cannot achieve sufficient effect with unenhanced leaves you may wish to try extract enhanced leaves; however you should have a sitter present when you try smoking these. Here is one way to make a 6X enhancement. Note: attempting to make enhancements much stronger than this will leave you with a sticky gummy mess.

Method: Take your dried leaf material and divide it into two portions one of which weighs 5 times as much as the other. Call the smaller portion B and the larger portion A. For this example we will assume you want to make about 5 G of 6X extract enhanced

leaves. You will need to start with 30 G of leaf powder. You would divide the 30 G into a 5 G sample and a 25 G sample.

You will need a suitable solvent for dissolving salvinorin A. The solvent should not contain any non-volatile impurities. Several possibilities exist: ethanol, methylene chloride, 91% isopropyl alcohol, acetone, etc. If using ethanol. It is best to use either denatured ethanol or absolute alcohol. Drinking alcohol of less than 190 proof is a poor solvent for salvinorin because of its water content. Absolute alcohol is pure ethanol, containing no more than 1% water. Denatured ethanol, is ethanol that has been rendered unsuitable for human consumption by the addition of a small percentage of a poisonous substance such as methanol or isopropyl alcohol. It is usually much less expensive than absolute alcohol or high proof drinking alcohol. When obtaining denatured alcohol, look for the kind that is denatured with isopropyl alcohol rather than methanol. It is much less toxic and therefore safer to handle. Never consume an extract that has been prepared with denatured alcohol until ALL traces of alcohol have been thoroughly evaporated. The extraction below can be done using any of the above solvents. Ethanol is the least toxic choice, and acetone is considered only slightly toxic. Chloroform is a known carcinogen and should be avoided. The extraction can be done at room temperature. **CAUTION: BOTH ACETONE, AND ALL THE TYPES OF ALCOHOL MENTIONED, ARE HIGHLY FLAMMABLE.** If working indoors a spark proof fume hood should be used. Avoid static sparks from carpets and use of flame. To avoid toxicity and fire, this extraction is best done outdoors away from all sparks and sources of flame.

Make sure the solvent used is of high purity and will evaporate completely (hardware store solvents might contain impurities). To test for non-volatile impurities, evaporate a drop of the solvent on a very clean piece of clear glass. After the solvent is evaporated, hold the glass over a black surface and look for any white deposits on the glass, then hold it over a white surface and look for any dark deposits. Also pick up the glass and look through it to see if there is any oily residue. This is like checking ones eyeglasses to see if they are clean. Any residual deposits on the glass indicate that the solvent leaves residue i.e. that it is impure. If it leaves no residue or stain and no residual odor or taste it is unlikely that it will leave any impurities in your extract enhanced leaves, provided that it is thoroughly evaporated from them prior to use.

Powder the 25 G sample and place it into a glass mason jar that has a screw top (make sure the seal on the jar top is not soluble in the solvent). Add at least 125 ml (1/2 cup) of solvent. Screw on the top. Shake well for 2 minutes. Let sit for a minimum of 24 hours (several days might yield a more complete extraction). Shake periodically (at least 5 or 6 times over the course of the extraction period). Then pour the entire contents of the jar through a fine mesh wire strainer (a tea strainer will do). Save all the solvent. With the back of a spoon squeeze the stuff in the strainer dry. Save the solvent that you squeeze out. Re-extract the filtered leaf material in an addition 125 ml fresh solvent. As

before, filter and squeeze the leaves dry, saving the solvent squeezed out. Pool all the solvent that has been in contact with the leaf material. Discard the spent leaves. Place the solvent in a broad, shallow container such as a pan or baking sheet. The container should be made of glass, stainless steel or Teflon lined steel. Cover with a wire strainer or screen and allow to evaporate out of doors. If this is impractical evaporation can be done indoors next to an exhaust fan or under a fume hood (open windows to insure good ventilation). Be careful though if the exhaust fan motor emits electrical sparks it may ignite the vapors. If doing indoor evaporation choose a solvent low in toxicity. When little solvent is left, add portion B of the leaves. Stir with a wooden utensil. Spread out thinly and allow to continue to air dry. The leaves will absorb the residual liquid. Allow to air dry thoroughly until free of all solvent odor and if possible until dry to the touch. Break up any clumps. Finally, the extract should be spread out thinly on an oven proof plate and placed in a 150 to 170 degree F oven for an hour. Exposure to this temperature will not destroy salvinorin but should remove any residual traces of solvent. The oven door should be cracked open an inch during this final 'desolventing'. Store in a sealed jar. Test by opening the jar after a day and smelling. If a solvent odor is present there is still residual solvent in the material and further drying is required prior to use.

You now have your smoking mixture. This is a 6X enhancement i.e. theoretically the leaf material is now 6 times as strong as unenhanced leaf material, so smoke it with great care, and have a sitter present. This stuff can be very strong.

Q. I don't want to chew quid or to smoke, how can a soft extract for sublingual use be made?

A. Strong preparations have been made using ethanol and using 91% isopropyl alcohol. Please note there have been no studies of the safety of sublingual soft extract. It is theoretically possible that the material might contain some harmful substance, either extracted from the plant or produced by reaction with solvent or in the oven heating phase of the preparation. Users have not reported side-effects from sublingual soft-extract but long term dangers (if any) are unknown. Since this material is waxy, it might not be a good idea to smoke it because one might be inhaling wax vapors into ones lungs. Various solvents can be used to make a soft extract. Extracts made using both ethanol and 91% isopropyl alcohol have proven effective.

The following recipe worked to prepare an isopropyl alcohol soft extract. The final product was a greenish black waxy substance about the consistency of beeswax. It looked like tar but had a tealike aroma and slightly bitter taste. It proved highly effective sublingually in a dose of 1/4 tsp.

1. Grind up a large amount of dried Salvia leaves. Grind them finely. You need not weigh the starting material. The more leaf material you start with the more soft extract you will get. So use as much as you can spare.

2. Place the ground up leaves in a polyethylene container with a well sealing polyethylene top. Polyethylene will not dissolve in isopropyl alcohol. Neither will glass but the rubber seals on glass jar lids may, so stick to polyethylene containers.
3. Add enough 91% isopropyl alcohol to cover the leaf material twice over. 91% isopropyl alcohol is available in pharmacies over the counter. It is used by some diabetics to sterilize reusable insulin syringes, and is pharmaceutical grade (very pure).
4. Shake the alcohol leaf powder mixture twice daily for at least a couple of days. The longer you do this the more complete the extraction will be. Leaving the material sit in a closet for weeks or even months will not hurt the final product. But two days with good shaking may be all that is needed.
5. If all the leaf material has not settled to the bottom of the container you will have to filter. Filtration is possible using cheese cloth for preliminary filtration followed by filtering through a coffee filter. If you left the container sit long enough you can skip the filtration step as all the leaf material will have sedimented out. If it has just decant the alcohol which was now greenish black in color.
6. Pout the more or less particle free green black isopropyl alcohol crude fluid extract into a Pyrex baking dish.
7. If weather permits evaporate it outdoors. Just cover with a clean aluminum screen and let it evaporate at ambient temperature. If indoor evaporation is necessary set it next to an exhaust fan for 48 hours.
8. Once all the alcohol has evaporated the mixture will no longer smell like rubbing alcohol but may contain water and be slimy. Expect a wet slimy greenish-black material to be coating the Pyrex baking dish. Once it no longer smells of alcohol place the pan in a 150 degree oven for a couple of hours. You may want to crack the oven open about an inch to let any residual alcohol vapors escape.
9. At this point the material in the pan should be a crust of film coating the pan. Open the oven and remove the pan from the oven and let it cool some but not down to room temperature.
10. With a plastic spatula scrape the black tar-like material off. There will be a lot of scraping. The scrapings are the stuff you want so don't throw them out! Place these scrapings into a plastic bag. When there is no more that can be scraped out of the pan take the scrapings in your hands (make sure they are clean first) and using your fingers roll the scrapings into a ball. Your fingers will become coated with the tarry soft extract.
11. Place the ball back into the plastic bag and let it cool to room temperature. As it does it will become stiffer.
12. The material can be stored at room temperature in a sealed plastic bag. It will probably keep a very long time.
13. To measure a dose, scoop out a tiny piece with a small measuring spoon e.g. 1/4 tsp size. Fill the measuring spoon with the extract. Since this is strong stuff and 1/4 tsp. is a large dose so you may want to use an 1/8 tsp. measure, or alternatively measure 1/4 tsp. and then cut than in half to get approximately 1/8 tsp.
14. To use, place the dose under your tongue. Lie down in a quiet place with dim

lighting. Chew the waxy material occasionally, parking it under your tongue between chews. Keep the Saliva formed in your mouth so salvinorin can be absorbed from it. Swallowing the material won't harm you but swallowed salvinorin is not effective. Once you want to come down, spit out the material remaining in your mouth and brush your teeth to rid you mouth of the remaining extract. Expect a strong trip that develops slowly.

XIV. POSSIBLE MEDICAL USES

Q. Are there medical or psychiatric uses?

A. Traditional Mazatec healers have used *Salvia divinorum* to treat medical and psychiatric conditions conceptualized according to their traditional framework. Some of the conditions for which they use the herb are easily recognizable to Western medical practitioners (e.g colds, sore throats, constipation and diarrhea) and some are not, e.g. 'fat lambs belly' which is said to be due to a 'stone' put in the victims belly by means of evil witchcraft.

Some alternative healers and herbalists are exploring possible uses for *Salvia*. The problems in objectively evaluating such efforts and 'sorting the wheat from the chaff' are considerable.

There are no accepted uses for *Salvia divinorum* in standard medical practice at this time. A medical exploration of some possible uses suggested by Mazatec healing practice is in order in such areas as cough suppression (use to treat colds), and treatment of congestive heart failure and ascites (is 'fat lamb's belly' ascites?). Some other areas for exploration include *Salvia* aided psychotherapy (there is anecdotal material supporting its usefulness in resolving pathological grief), use of salvinorin as a brief acting general or dissociative anesthetic agent, use to provide pain relief, use in easing both the physical and mental suffering of terminal patients as part of hospice care, and a possible antidepressant effect.

If a specific salvinorin receptor were discovered this would be of great interest to psychopharmacology and neuroscience.

XV. FINDING OUT MORE

Q. What are some *Salvia* related URLs?

A. The best place to start is at the [Salvia divinorum Research and Information Center](#) home page. There you will find links to many related sites. To discover more, just use your favorite search engine to search on terms like 'Salvia', 'Salvia divinorum', 'Mazatec', and 'salvinorin' One of the best search engines to use is [google.com](#).

Q. Are there any online *Salvia divinorum* discussion forums?

A. Yes, there are many:

- [SalviaD.](#) An open-membership email-based *Salvia divinorum* discussion forum. This is a large list that generates a high volume of posts.
- [SkaMariaPastora.](#) An open-membership email-based discussion forum focusing on the spiritual use of *Salvia divinorum*.
- [Salvia-SF.](#) A small open-membership email-based *Salvia divinorum* discussion forum for people living in the San Francisco Bay Area.
- [The Salvia Plane.](#) An open-membership web-based *Salvia divinorum* discussion forum at SpiritPlants.com.
- [Salvia divinorum.](#) An open-membership web-based *Salvia divinorum* discussion forum at Yahoo.com.
- [Gruppo di discussione dedicato al mondo di Salvia Divinorum.](#) An closed-membership email-based *Salvia divinorum* discussion forum in Italian.
- [Alt.drugs.salvia](#) An open-membership newsnet *Salvia divinorum* discussion forum.
- [Sagewise.](#) A closed-membership email-based discussion forum for *Salvia divinorum* researchers and professionals. The list is moderated and maintained by Daniel Siebert.

Q. Where can I learn about the history of Salvia divinorum and salvinorin?

A. Checking the sites listed above and the references cited below would be a good beginning, if you're interested in finding out even more consult a good librarian:

Ortega, A. *et al.* 1982. Salvinorin, a new trans-neoclerodane diterpene from *Salvia divinorum* (Labiatae). *Journal of the Chemical Society Perkins Transactions*. I 1982: 2505-2508.

Ott, J. 1995. Ethnopharmacognosy and Human Pharmacology of *Salvia divinorum* and salvinorin A. *Curare*. 18 (1): 103-129

Siebert DJ. 1994. *Salvia divinorum* and salvinorin A: new pharmacologic findings. *Journal of Ethnopharmacology*. Jun;43(1):53-56

Valdés III, L.J. *et al.* 1983. Ethnopharmacology of Ska Maria Pastora (*Salvia divinorum*, Epling and Jativa-M.). *Journal of Ethnopharmacology*. 7:287-312.

Valdés III, L.J. *et al.* 1984. Divinorin A, a psychotropic terpenoid, and divinorin B from the hallucinogenic Mexican mint *Salvia divinorum*. *Journal of Organic Chemistry*. 49: 4716-4720.

Valdes LJ III. 1994. *Salvia divinorum* and the unique diterpene hallucinogen, Salvinorin (divinorin). *Journal of Psychoactive Drugs*. 26(3):277-283.

Salvia divinorum User's Guide.

The *Salvia divinorum* User's Guide

Version date: October 14, 2000

(The most recent version can always be found at:
<http://sagewisdom.org/usersguide.html>)

Created by "Sage Student", with contributions and HTML rendering by [Daniel Siebert](#)

WHY YOU WERE GIVEN THIS GUIDE

Perhaps a friend gave you a *Salvia divinorum* cutting, or maybe you bought dried leaves, an extract, or a living plant. If so, you need to read this guide. It was written to teach you how to work with this herb in a way that is personally rewarding, and how to do so as safely as possible. It will also teach you how to grow and care for your own *Salvia divinorum* plants.

Many more people are trying *Salvia divinorum* now than were several years ago. It is becoming both popular and controversial. *Salvia divinorum* is a powerful visionary herb--it is no placebo. But Salvia is unique. It is not "legal acid." It is not "legal pot." It is not a substitute for any other drug. It is not an analog of any other drug. It is extremely important that you know about its effects, its possible dangers, and how to avoid the dangers before trying it.

Do **NOT** use Salvia until you have read through this guide. NO MATTER WHAT OTHER DRUGS YOU MAY HAVE EVER USED, THEY DO NOT PREPARE YOU FOR SALVIA. SALVIA IS UNIQUE. Salvia has much to offer: fascinating psychoactive effects, sensual enhancement, magical journeys, enchantment, apparent time travel, philosophical insights, spiritual experiences, and perhaps even healing and divination , but Salvia is intolerant of ignorance. If it is used stupidly it can turn on you. By learning what is written here you can avoid serious trouble.

IT'S FREE

No one should have charged you for this guide. It should be given to people free of charge whenever plants or leaves are given away, or sold. No one should make a profit from it. It was written as a public service. The authors will not receive any royalties.

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This guide should be given free of charge to anyone who is interested in Salvia. Please print this guide in its entirety. Give it free of charge to everyone with whom you share leaves or plants. If you copy it, copy **ALL** of it. Do not change it. Supply it as is. As more is learned about Salvia, this guide will be updated. For this reason, it is important that the VERSION DATE (above) be included in the copy you give out. That way, the person getting it will be able to know if their copy is up to date.

DO NOT COPY TO OTHER WEB SITES

This guide is updated frequently. The most recent version can always be found at: <http://sagewisdom.org/usersguide.html>. I do not want to see obsolete versions floating around on the Internet. So please do not copy it to other web sites. If you want to make the guide accessible from another web site, simply include a link to the above URL.

JUST A BEGINNING

This guide is just a beginning. After reading it, you may wish to learn more. An excellent resource for additional information is *The Salvia divinorum Research and Information Center* web site at: <http://sagewisdom.org>. This website, created by Daniel Siebert, provides a wealth of information, including:

- The most up-to-date version of *The Salvia divinorum User's Guide*.
- The *Salvia divinorum* FAQ.
- Images of *Salvia divinorum* plants and the chemical structure of salvinorin A.
- Experiential trip reports.
- Scientific papers and articles about *Salvia divinorum*.
- Links to many other Salvia sites.
- Information on joining various on-line *Salvia divinorum* discussion forums.
- *Salvia divinorum* inspired artwork.
- A calendar of conferences, seminars, and lectures.
- The virtual *Salvia divinorum* altar.

SALVIA DIVINORUM BASICS

Salvia divinorum is a species of sage (the genus *Salvia*). There are approximately 1000 species of sage worldwide, but *Salvia divinorum* is the only vision-inducing species known. Salvia is a member of a very large family of plants known as the Labiatae. Because mint is a well-known member of this family, it is sometimes referred to as the mint family. *Salvia divinorum* makes a beautiful house plant, and it can be grown just for that reason, but most people who grow this plant are interested in its fascinating psychoactive effects.

The botanical name *Salvia divinorum* means "Sage of the Diviners." Under the right conditions, taken in the right way, *Salvia* produces a unique state of "divine inebriation." For hundreds of years, it has been used in religious and healing ceremonies by the Mazatec Indians, who live in the province of Oaxaca, in Mexico.

At present (Sept. 29, 2000), neither *Salvia divinorum* nor its active principal, salvinorin A, are controlled substances anywhere in the world. It is completely legal to grow, buy, and sell *Salvia* plants or leaves.

The effects of *Salvia* are very different from those of alcohol; but like alcohol, it impairs coordination. **NEVER, EVER, ATTEMPT TO DRIVE UNDER THE INFLUENCE OF SALVIA--DOING SO COULD PROVE FATAL!**

In many ways *Salvia divinorum* is in a class by itself. No other herb or drug is really very much like it. It is misleading to compare it to other psychoactive substances. It is a truly unique visionary herb.

Salvia contains a chemical substance called salvinorin A (often referred to just as salvinorin). Salvinorin is responsible for *Salvia*'s mind-altering effects. It is not chemically related to any other psychoactive drug. Unlike most visionary compounds, it is not an alkaloid. Although it is not habit forming, pure salvinorin is extremely strong. Doses of only several hundred micrograms (millionths of a gram) will have an effect, and doses above 1 milligram (1/1000 of a gram) are too much for most people to handle comfortably. Because of its extreme potency, Salvinorin should never be used unless the dosage has been precisely measured with extremely accurate chemist's scales. Fortunately, *Salvia* leaf is hundreds of times weaker than pure salvinorin; therefore, *Salvia* leaf can be used much more safely than pure salvinorin.

Salvia leaf is physically quite safe. It is very gentle on the body. No one has ever died from a *salvia* overdose. *Salvia* is not a stimulant, it is not a sedative, it is not a narcotic, it is not a tranquilizer. Like many entheogens, it can induce visions, yet it is quite different from other entheogens. Dale Pendell, in his book *Pharmako/Poeia*, assigns *Salvia divinorum* to a unique pharmacological class, which he calls "existential." This term alludes to the philosophical illumination *salvia* seems to shine on the nature of existence itself. Daniel Siebert has proposed the term *enchantogen*--a neologism, meaning "a substance that produces enchantment." No one knows how salvinorin works in the brain. We do know it works differently than any other known psychoactive substance.

SALVIA IS NOT A PARTY DRUG

This is important to understand. Salvia is not "fun" in the way that alcohol or Cannabis can be. If you try to party with Salvia you probably will not have a good experience.

Salvia is a consciousness-changing herb that can be used in a vision quest, or in a healing ritual. In the right setting, Salvia makes it possible to see visions. It is an herb with a long tradition of sacred use. It is useful for deep meditation. It is best taken in a quiet, nearly darkroom; either alone (if a sitter will not be used, see below for discussion of sitters), or with one or two good friends present. It should be taken either in silence or (sometimes) with soft pleasant music playing.

SALVIA TRIPS: WHAT TO EXPECT

Salvia trips range in intensity from subtle, to extremely powerful. This holds true for chewed leaves and smoked leaves, and for oral tinctures, such as "Sage Goddess Emerald Essence®." The strength of the trip will depend on how much you take, the way you take it, and your individual body chemistry.

Salvia trips differ from those produced by other visionary drugs or herbs, and Salvia has many advantages:

- You cannot take a fatal overdose of Salvia leaves.
- Salvia is not habit forming.
- Salvia is legal.
- Its effects are brief in duration, so you quickly return to normal.
- Salvia seldom produces adverse side-effects or hangover.

Noise and distraction will interfere with the trip. When on Salvia, watching TV is nothing but annoying; sitting around a campfire in the woods at night, is wonderful.

Because *Salvia divinorum* can alter perception and behavior, it must never be used in a public environment--doing so would draw unwelcome attention.

Especially if you are not used to it, or are taking a potent preparation like an extract, you should have a sober baby sitter there to make sure that you don't do something dangerous, like knocking over lit candles, or walking out a window.

When Salvia is smoked the effects come on very quickly: in less than a minute. When it is chewed the first effects come on at about 15 minutes and full effects at about 30 minutes. If taken as a tincture held in your mouth, the effects come on in 15 minutes or less. Usually a Salvia trip lasts from 15 minutes to an hour.

Occasionally trips may last up to 2 hours. To be on the safe side, it is important not

to drive or use machinery for several hours after the trip appears to be ended.

Most people have no hangover from Salvia; however, some people sometimes report a mild headache. If Salvia is smoked the smoke may irritate your lungs.

Salvia trips seem to occur in levels. The so-called S-A-L-V-I-A scale has been constructed to rate trips. Each letter of the word *SALVIA* stands for another level of tripping. The scale describes six different levels of intoxication, each one more intense than the previous. The overall intensity of Salvia trips is scored according to the highest scale level attained during the course of the trip.

S-A-L-V-I-A Trip Rating Scale

Level - 1 "S" stands for SUBTLE effects. A feeling that "something" is happening, although it is difficult to say just what. Relaxation and increased sensual appreciation may be noted. This mild level is useful for meditation and may facilitate sexual pleasure.

Level - 2 "A" stands for ALTERED perception. Colors and textures are more pronounced. Appreciation of music may be enhanced. Space may appear of greater or lesser depth than is usual. But visions do not occur at this level. Thinking becomes less logical, and more playful; short-term memory difficulties may be noted.

Level - 3 "L" stands for LIGHT visionary state. Closed-eye visuals (clear imagery with eyes closed: fractal patterns, vine-like and geometric patterns, visions of objects and designs). The imagery is often two dimensional. If open-eyed visual effects occur, these are usually vague and fleeting. At this level, phenomena similar to the hypnagogic phenomena that some people experience at sleep onset occur. At this level, visions are experienced as "eye candy" but are not confused with reality.

Level - 4 "V" stands for VIVID visionary state. Complex three-dimensional realistic appearing scenes occur. Sometimes voices may be heard. With eyes open, contact with consensual reality will not be entirely lost, but when you close your eyes you may forget about consensus reality and enter completely into a dreamlike scene. Shamanistic journeying to other lands--foreign or imaginary; encounters with beings (entities, spirits) or travels to other ages may occur. You may even live the life of another person. At this level you have entered the shaman's world. Or if you prefer: you are in "dream time." With eyes closed, you experience fantasies (dream like happenings with a story line to them). So long as your eyes are closed you may believe they are really occurring. This differs from the "eye candy" closed-

eye imagery, of level 3.

Level - 5 "I" stands for IMMATERIAL existence. At this level one may no longer be aware of having a body. Consciousness remains and some thought processes are still lucid, but one becomes completely involved in inner experience and loses all contact with consensual reality. Individuality may be lost; one experiences merging with God/dess, mind, universal consciousness, or bizarre fusions with other objects--real or imagined (e.g. experiences such as merging with a wall or piece of furniture). At this level it is impossible to function in consensual reality, but unfortunately some people do not remain still but move around in this befuddled state. For this reason a sitter is essential to ensure the safety of someone voyaging to these deep levels. To the person experiencing this the phenomenon may be terrifying or exceedingly pleasant; but to an outside observer the individual may appear confused or disoriented.

Level 6 - "A" stands for AMNESIC effects. At this stage, either consciousness is lost, or at least one is unable to later recall what one had experienced. The individual may fall, or remain immobile or thrash around; somnambulistic behavior may occur. Injuries can be sustained without pain being felt; on awakening, the individual will have no recollection of what he/she did, experienced, or said in level 6. People cannot recall what they experience in this very deep trance state. This is not a desirable level, because nothing can later be recalled of the experience.

METHODS OF USE

Salvia is never taken by injection. There are many different methods of use. Several will be discussed here.

TRADITIONAL MAZATEC METHODS

The two traditional Mazatec methods are quite inefficient in that they require many more leaves than do the other methods. But they are very safe. Traditionally the leaves are taken in a semi-darkened room as part of a healing or religious ceremony. At least one sober person is present to watch over the people who have taken Salvia. A water-based drink made from ground-up fresh leaves is one of the traditional Mazatec ways of using this herb. It requires a lot of leaves and tastes somewhat unpleasant, so this method is seldom used by non-Mazatecs. Salvinorin is very poorly absorbed from the stomach so it requires enormous amounts of leaves to make the drink effective. But it does work, and trips from the drink last longer than from any other method. Chewing and swallowing a large number of fresh leaves is the other Mazatec method. When this is done the leaves are nibbled slowly for about 1/2 hour. Although the chewed-up leaves are swallowed, most of the effect is due to salvinorin that is absorbed through the tissues of the mouth during the chewing. This is a less efficient way of chewing Salvia than the quid

method (see below). Most people find chewing and swallowing fresh leaves to be unpleasantly bitter, and for some, it causes gagging.

MODERN METHODS

THE QUID METHOD:

A ball or cylinder of rolled-up leaves is made. This is called a quid. It is to be chewed. The leaves are chewed slowly--about one chew every 10 seconds. They are kept under your tongue between chews. For half an hour keep the quid that is being chewed, and the juice that forms, in your mouth. If you can, hold it in your mouth without spitting or swallowing. Then, after the half-hour chewing time is over, spit it all out. Have a bowl to spit into, and a towel handy. Salvia juice stains carpets and other fabrics, so be sure the bowl won't tip over.

Quids can be made from either fresh leaves or dried leaves. Those made from dry leaves are less bitter. To make a quid from dried leaves, weigh out 2-8 grams of dried leaves. A gram scale accurate enough for this can be purchased for under \$50. If you have no scale, count out 8 to 28 large whole dried leaves. Place the leaves in a small bowl of cool water for 10 minutes. Once the leaves are wet and have been soaking for about 10 minutes, remove the leaves from the water, squeeze the excess water out of them, and ball them up into a quid. Some people skip this soaking step when they are in a hurry, but chewing on brittle dry leaves may be unpleasant. If you wish, you can sweeten the quid with sugar, honey, Stevia extract or an artificial sweetener like Equal®. This will make it less bitter and more pleasant to chew.

If fresh leaves are used instead of dry ones, you will need from 8 to 28 large fresh leaves.

The effect of Salvia quids can probably be increased by first treating your mouth in a special way to increase its ability to absorb salvinorin. To do this you will need a toothbrush and an alcohol/menthol containing mouthwash such as Cool Mint Listerine®, (or any other brand that contains alcohol and menthol). Gently brush the lining of your mouth, including the tissue under your tongue, and the top surface of your tongue. This removes layers of dead cells normally present. Do not brush hard enough to cause bleeding. Then rinse with the mouthwash for at least 30 seconds. Be sure to get mouthwash everywhere in your mouth, including under your tongue. Then spit out the mouthwash and rinse once with water.

You will experience very little in the first 12 to 15 minutes of chewing. don't be misled by this. Full effects are usually felt by 30 minutes (the time you spit out the quid). They remain on this level for about 20 minutes more, then start to decrease. The whole trip seldom lasts much longer than an hour and a quarter, but this

varies.

SMOKING:

Dried leaves can be smoked in a pipe. They need to be smoked hot and the smoke must be inhaled deeply and quickly to have an effect. Because salvinorin requires high temperatures to vaporize, it is best to hold a flame immediately above the leaves, drawing it down into the leaves the whole time you inhale. The leaves can be smoked in a short-stemmed tobacco pipe, in a bong, or in a "steamroller" pipe. Fill up a medium size bowl with leaves. Use a hand-held butane lighter that will go out when you are no longer pressing it, not a match. Have a large ashtray or tip-proof bowl to set the pipe in when you feel you've had enough. Remember that when tripping you may forget you are holding a lit pipe. You could drop it, causing a burn or a fire; therefore, it is best to have a sitter present when smoking. First effects will be noticed within a minute of inhaling. After 5-6 minutes the effects will gradually begin to subside. The total duration of the trip may be less than 30 minutes or as long as an hour.

Extract-enhanced leaves can also be smoked. Extract-enhanced leaves can be very strong and should only be smoked when a sitter is present. It is possible to vaporize leaves or extract in a special vaporizer that heats up material without burning it. Vaporization can be deceiving. Because very little smoke is produced, it is possible to inhale a very large dose without realizing it. Anyone trying vaporization absolutely **MUST** have a sitter present. Many commercial vaporizers made for Cannabis will not work for Salvia. Special Salvia vaporizers can be built easily, but vaporization is not for those new to Salvia.

Vaporization of pure Salvinorin is also possible. It is definitely not for beginners! Unless the dose has been measured very precisely, this is extremely dangerous, as it's very easy to vaporize too large a dose. To be done safely, vaporization of salvinorin requires weighing the dose on a very precise chemical balance capable of weighing salvinorin in micrograms (millionths of a gram). These analytical balances cost well over \$1000. But there are now available standardized doses of Salvinorin on leaves, using such preparations enables one to inhale a known precisely measured dose of salvinorin. This allows someone to experiment with salvinorin without having to buy an analytical balance, and greatly reduces the risk of overdose.

There is now a commercially available Salvia tincture. It is marketed by Daniel Siebert as "Sage Goddess Emerald Essence®." This fluidextract of *Salvia divinorum* is intended to be kept in one's mouth until its salvinorin content has been absorbed. While it can be taken undiluted, it is quite irritating to the mouth if taken in this way. The irritation is due to its high alcohol content. It is better to take it diluted with hot water. The amount of alcohol taken even in a large dose of the

extract is not sufficient to produce alcohol intoxication. The effect of the tincture is that of Salvia, not that of whiskey. The alcohol is in the tincture solely as a solvent. The tincture comes with two droppers, one for the tincture, and a different one for the hot water. And comes with detailed instructions regarding its use and appropriate dosage. A simple method of using the extract is to dispense the measured dose into a small glass such as a shot glass and then add an approximately equal volume of water that has been heated to the temperature at which one drinks coffee. Immediately after mixing the two, sip the contents of the shot glass, and hold it in your mouth without swallowing. Keep your tongue elevated above the floor of your mouth to allow the sublingual tissues (those under the tongue) to absorb the salvinorin. This means keeping the liquid in your mouth until either the desired effect has been reached or 1/2 hour has passed. Then swallow it or spit it out, whichever you wish.

WHICH METHOD IS BEST?

There are pros and cons to each method. Some people report that a quid gives a stronger, deeper, more visionary trip than smoking. Others report that chewing doesn't work for them at all, but smoking does. For those who get little effect from either method, the two methods can be combined. First chew a quid, and then, after spitting it out, light up. If you already smoke tobacco or Cannabis you will probably be comfortable with smoking Salvia. If you are a non-smoker you will probably prefer the quid method. Bear in mind that smoking anything, even Salvia, can't be good for your lungs. Unlike smoke, orally consumed Salvia does not irritate your lungs.

It requires quite a bit more dried leaf for a quid trip than for a smoke trip. If you have very little leaf material available, smoking is the way to get a trip out of the little you have.

Quid trips come on slowly but last longer. They are better for exploring Salvia's world. They are better for deep meditation.

Salvia tincture (e.g. "Sage Goddess Emerald Essence®") has the same effects as a quid trip, however the dosage can be adjusted more precisely, the effects come on somewhat faster, and holding the not unpleasant tasting tincture in one's mouth is much nicer than holding chewed up leaves in your mouth. The only side-effects reported that are unique to the tincture have been "burning" of the lining of one's mouth. This occurs if the alcohol in the tincture has not been sufficiently diluted. It may leave one's mouth mildly sore the next day, in much the way that it would be if you drank soup that was scalding hot. This problem can be prevented by diluting the tincture with enough water.

Until you know how sensitive to Salvia you are, do not experiment with extracts, vaporizers, or salvinorin. Chewing quid, using tincture, or smoking leaves, will take many people all the way to level 5. There is no need for these people to experiment with stronger and more dangerous ways of taking Salvia.

There are some people--albeit a minority--who, even after many experiments, find they remain "Salvia-hardheads." They never experience more than a slight Salvia effect from smoking, or from a quid. Some of these hardheads will get satisfactory results if they chew a quid, and then immediately smoke after spitting out the quid. Others will find even this ineffective. For them, extract-enhanced leaves are necessary to produce effects. See how sensitive you are before experimenting with stronger forms of Salvia. With a little practice, quid chewing, or smoking, or combining the two ("boosting"), works quite well for most people. Many people find it takes several meetings with Salvia before a "breakthrough" experience occurs. So don't label yourself a "Salvia-hardhead" too soon.

SITTERS and SAFETY

WHEN YOU NEED A SITTER

A sitter is absolutely essential if you are taking doses on which you may freak out, become confused, injure yourself, fall, set your house on fire, or do anything that might harm others. Have a sitter present if you are new to Salvia, are experimenting with a stronger form than you have used before, or are using a more powerful way of taking it.

An experienced Salvia user who is chewing a quid, may often choose to do it alone, and may be quite safe in doing so. But having a pleasant, sensible, sober sitter is an absolute must if you are trying vaporization, smoking extract enhanced leaves, or using pure salvinorin. Smoking leaves usually falls in between in terms of risk. Many people do so without a sitter, but a sitter is never a bad idea. Use sound judgment.

WHAT A SITTER SHOULD KNOW AND DO

The sitter must remember that no matter how crazy the tripper acts, Salvia trips are short lived. don't take the tripper to the emergency room (unless, of course, there is a true medical emergency). Keep the person safe and wait it out. If you can't keep the person safe, get help. Otherwise keep the matter private. Within an hour or so (usually much less) the tripper will be back to normal. It's very reassuring to hold onto this knowledge if things get messy. It helps to have experienced Salvia yourself before baby-sitting another person. Experience with other visionary materials may be only partially helpful. The sitter should know that Salvia is different from these. Touching to "ground the tripper" works for some trippers on some entheogens, but may be very threatening for someone on Salvia. If you plan on touching, clear it with the tripper BEFORE the trip starts.

THE ROLES OF THE SITTER

The sitter has three jobs:

The most important job is to keep the tripper, and others who may be present, safe. This comes before all else. The main danger is accidental injury. Your job is to be a gentle guardian. Be as unobtrusive as possible, but remain alert incase the tripper should suddenly start moving about recklessly. Do not use physical force unless nothing else will do. Use of physical force may result in the tripper or you getting hurt. It could be misinterpreted as an assault. **NEVER LET SALVIA BE USED WHERE FIREARMS, KNIVES, OR OTHER DANGEROUS OBJECTS ARE PRESENT.** Take the tripper's car keys for safe keeping before the trip starts. Keep the tripper safe from falls, head banging, sharp objects, walking into walls, walking into furniture, walking through windows, wandering out into the street or other public areas, open flames, hot surfaces, and breakable objects. But let the tripper move about in a safe area. Do not grab or try to physically restrain him/her, unless absolutely necessary. Redirect. Speak softly. Gently take dangerous objects away. Use the minimum touching necessary (the confused tripper may think your touching is an assault or rape and react to the imagined danger). You may have to handle unexpected intrusions of strangers and other awkward social situations.

The second job of the sitter is to reassure. Often, simple repeated explanations may help a frightened tripper, e.g. "You're safe, I won't let anything harm you." "You're just having a bad trip, you'll feel better in a few minutes." "Your name is....." "I'm your friend" If speech is not called for, be silent. Silence is often less threatening to the confused tripper than trying to decipher what a sitter is saying.

The third job of the sitter is to help the tripper later recall the trip. There are several ways. Use a notebook and record all the tripper's odd doings and sayings. Later you can ask about these. This may help jog the person's memory about what was experienced. Another technique, if the tripper is not too far gone to talk during the trip, is to ask repeatedly "what are you experiencing now?" A notebook, or a tape recorder, can be used to record responses. Since some trippers will prefer that you remain silent and don't record, clear it with the tripper in advance.

COMMON SENSE GUIDELINES

- NEVER USE SALVIA IF GUNS, KNIVES, OR OTHER DANGEROUS OBJECTS ARE WITHIN EASY REACH.
- NEVER DRIVE WHEN TAKING SALVIA.
- Choose the time and place of your trip carefully. Privacy and safety are essential. Be very careful about heights, and open flames such as candles.

Do not take Salvia when you may be interrupted by phone calls, visits, pets, children, etc. Turn off your telephone and set your answering machine to silently record incoming calls. You can return the calls in a couple of hours once you are sober.

- Give careful thought to how much you will take, and how you take it.
- After all smoking material is safely out, lie down in bed, on a couch, or on a carpet. You are much safer lying down than you would be stumbling around. Stay put for the rest of the trip. You can trip best with your eyes closed.
- Have a sitter (this is especially important if you are new to Salvia, taking a high dose, smoking extract, or using a very strong delivery system such as vaporization).
- Volunteer to be a sitter for others.
- If you have mental health problems, don't take Salvia without first discussing it with your therapist, or doctor.
- Practice and encourage responsible use. don't give Salvia to minors, or to violent or unstable people. don't share it with strangers. Know who you are giving it to and know why they want to use it. Why ask for trouble?
- Never take Salvia while at work or in public. Keep it private. It's not for concerts. It is not for raves. It's not for large noisy parties. Better to use it in a quiet safe private place in the company of a few good friends.
- Mixing Salvia with other drugs or large amounts of alcohol may cause out-of-control behavior, or terrifying trips. While experienced Salvia users have experimented with combinations, these are not for Salvia beginners, and are certainly riskier than just using Salvia by itself. While there are no known toxic drug-drug interactions between Salvia and anything else, this has not been studied scientifically.
- Be extra careful of flames (candles, lighters, fire, etc.) when using Salvia.
- Be very careful about using vaporized extracts, vaporized leaves, or smoking extract enhanced leaves. These require a sitter to be present. Chewing quid or smoking leaves is much less likely to produce out-of-control behavior than these are.
- Never use pure salvinorin unless the dose you are taking has been weighed with an ultra-accurate balance that can weigh out doses in micrograms, and you know exactly how much you can safely take. Even if you do meet these requirements, you still should have a sitter present.

THE PLANT AND ITS CARE

If you will be growing your own Salvia, you should read this. If you will not be growing your own, you may wish to skip this section.

Salvia divinorum is a semi-tropical perennial. That means that it can grow year

after year, but only if it is not exposed to freezing temperatures. It is a green plant with large leaves and a distinctive thick, hollow, square green stem. It can grow several meters (yards) high if conditions are favorable. When it grows high enough, the branches will bend, or break, and may root if they come in contact with moist earth. Although *Salvia divinorum* can flower under natural lighting conditions, it almost never sets seed that will sprout. So the plant is almost always propagated by cuttings. The leaves are oval, weakly notched (serrated) and can be quite large (up to 9 inches in length). They are usually emerald green, but under some conditions, may be yellow-green or even yellow. They are covered with a fine coating of extremely short hairs (trichomes), giving the leaves a satin like velvety appearance in certain lights. The plants grow best in partial shade, in well-watered, but well-drained, soil. The roots must not be kept constantly soaked, or root-rot will set in and kill the plant.

Salvia divinorum can be grown indoors in any climate. It makes a beautiful house plant.

You can grow *Salvia divinorum* outdoors all year round if you live in a humid semi-tropical climate, with well-watered, but well-drained soil, with a high humus content. If you live in a colder or drier climate, you can still grow *Salvia* outdoors, weather permitting. But you may have to do it with some care, making sure it is protected from frost, watered frequently, and misted when humidity is low. *Salvia* will not live through freezing or drought. It can be grown outdoors in pots which can be brought indoors when it is cold (below 40 degrees Fahrenheit). That way it can be grown outdoors in summer and indoors in winter.

Salvia will tell you when it is getting too dry: its leaves will droop. Be sure to water it at the first sign of mild drooping--do not let the plant become limp. The soil should drain well but should be kept moist. If planting *Salvia* in pots, make sure the pot is large enough to allow the plant to grow well. Although your available space will limit possible pot size, use the biggest pot that is practical. It must have drainage holes. Placing gravel (or broken up pieces of crockery) in the bottom of the pot will help promote drainage and thus discourage root-rot. Most commercial potting soil will work well. Adding Vermiculite® or Perlite® to the potting soil is helpful but not essential.

Salvia will need fertilizer. Any good general-purpose fertilizer will work. Fish emulsion is a good organic fertilizer choice, but because it has a very unpleasant odor, it is suitable only for outdoor use. Satisfactory results can be achieved with chemical fertilizer products. Some of them are:

Scott's® All-Purpose Plant Food (18-13-13) lightly sprinkled on the soil about

once every six weeks. Miracle-Grow® (15-30-15) or MirAcid® (30-10-10) added to the water once a week (1/4 tsp. per gallon). Peter's® Professional Soluble Plant Food (15-30-15) 1/4 tsp. to gallon of water once per week.

If growing indoors, take the plants outdoors when it is warm enough, and let rain fall on them. This will prevent mineral salts from building up in the soil and killing your plant

Salvia divinorum can do well in a variety of different lighting conditions. It does best with a few hours of partial sunlight a day. It can do well when grown indoors near a window. It can handle more sun if kept well watered and misted frequently. It can also handle moderately deep shade. When changing the lighting conditions or the humidity conditions your plants are exposed to, do so gradually. Given enough time, *Salvia* is very adaptable, but it may take weeks to get used to a new environment.

Many pests can attack *Salvia*. Whitefly is a big problem for greenhouse grown plants. Aphids, slugs, caterpillars, thrips, spider mites, and scale insects can also damage your plants. Root-rot and stem-rot can be problems. Fungal spots can appear on leaves. It is not known which plant viruses attack *Salvia divinorum*, but probably some do, as many attack other sages.

Aphids and scale insects can be removed with a cotton swab dipped in isopropyl (rubbing) alcohol.

Slug damage can be reduced by growing *Salvia* in pots on a raised deck or palette. Some may still get by and attack your plants. Keep an eye out for these slimy pests. One slug can eat an awful lot of *Salvia*! Beer can be used to attract and drown slugs. Set a saucer of beer in a slight depression in the ground; the surface of the saucer should be flush with the soil, so slugs can get in, get drunk, and drown.

Spider mites can be controlled by dissolving Castile soap in water and spraying the leaves, including the underside. Repeat at two-week intervals for three applications. Caution: there have been some reports of soap damaging leaves, so don't use too much.

Your garden hose is your best friend in fighting most outdoor pests. Spray the leaves hard enough to blow the pests away, but not hard enough to damage the leaves. don't forget to spray the underside of the leaves too. A fine mist nozzle works best for this.

Salvia divinorum is usually propagated by cuttings, not by seed. Cuttings may be rooted either in water or directly in soil. Here's how:

ROOTING IN WATER:

Cut off a branch (4-8 inches long) bearing some leaves. Cut off the leaves that are attached to the lowest node on your cutting then immediately place it in about one and a half inches of water in a small water glass. Only one cutting is to be put in each glass, so if rot develops in one cutting it cannot spread to another.

It is best if the cutting is cut back to just below a node, since nodes are the places from which new roots are most likely to develop. While it is not necessary to make the cut here, doing so has the advantage that there will be no stem material dangling in the water below the node. This is important as the cut stem end is more likely to start to rot than is a node.

Make sure the cutting is made with clean shears, or a knife, so the cut stem does not get attacked by germs and fungi that could cause stem rot. Place it where it will get some filtered sunlight. Change the water daily. It may be a good idea to use cooled boiled water. If your water is chlorinated, boiling will drive off chlorine. Non-chlorinated water may be contaminated with plant disease germs, but boiling should kill these. Rooting in water is successful about 75% of the time (the rest of the time stem rot occurs and kills the cutting).

In two weeks roots will start to develop. When they are about 1/2-1 inch long, transplant to potting soil in a well-drained pot. Cover with a clear glass jar or clear plastic bag to serve as a humidity tent until the plant establishes its roots in the soil and appears vigorous (usually 1-2 weeks). Then gradually wean the plant from dependence on the humidity tent.

Some growers report that *Salvia* branches that break off spontaneously in summer are more likely to root successfully than those deliberately cut. Rooting in water outdoors may decrease the chance of stem rot occurring. apparently the UV light in unfiltered sunlight acts to kill germs or fungi in the water.

ROOTING IN SOIL:

Salvia can be rooted directly in soil. Materials needed:

- Potting soil.
- Two disposable plastic cups.
- Some Rootone® powder (this is a rooting hormone mixture that also contains a fungicide) it is available at most nurseries in the United States.
- A 1-gallon thin, transparent, polyethylene food storage bag.

- A rubber band.
- Water.

METHOD:

Punch some small holes in one of the cups for drainage. Fill the cup 2/3 the way up with potting soil. Using a pencil or a finger make a hole in the soil about 2 inches deep. The soil is now ready for your cutting. You must now prepare the cutting. With clean shears, cut off a length of stem from a healthy plant. Leave a few leaves (small ones) on top. Harvest the larger leaves from the cut-off stem. Immediately after cutting the stem, place it in clean water. Cut it back to just below a node, as roots will develop from the node. Keep the cut surface wet. Place the cut surface, and the stem for about 1 inch above the cut, into the rooting powder. Shake off the excess. Rooting powder is somewhat toxic, so wash your hands after handling it. Place the powder coated cutting in the hole in the soil. Gently push the soil around the cutting, holding it in place while filling in the hole. Water the planted cutting until some water runs out the drainage holes. Place the cup with the plant in it into the second plastic cup (which is there to catch any runoff water). You may want to put a small piece of wood or plastic in the bottom of the outer cup to act as a spacer. This allows enough space for excess water to drain. Place a 1-gallon clear plastic bag over the rooted cutting, using a rubber band to hold it in place. The rubber band should be outside the bag and the bag outside both cups. The Rubber band holds the bag against the cups. As the plastic bag acts to conserve moisture, frequent watering is not required. After several weeks you can transplant the now rooted plant to a larger pot.

PROCESSING PLANT MATERIAL

Dried *Salvia divinorum* leaves should be stored in sealed containers away from light. Stored this way, the leaves will retain their potency for many, many years, perhaps indefinitely (nobody knows just how long). If you are growing your own, you will probably want to dry leaves for future use. There are several ways to do this.

- **Method 1.) Nature's Bounty**

Wait until the leaves die or are shed. Gather them. Place them on a plate in a room with low humidity. Turn often. Wait until they are dry, then store. It is not known if naturally shed leaves are stronger or weaker than picked leaves.

Advantage: you won't be depriving your plants of leaves it needs.

Disadvantage: you will have to wait until the plant is ready to make a donation to your cause. Leaves may not be in prime condition.

- **Method 2.) Salvia "Tobacco"**

Take big, freshly picked leaves and place one atop another (like stacking

sheets of paper). Then cut through the pile, making 1/2 cm. (1/4 inch) strips. Pile these on a plate into a heap. Turn them twice daily until they are dry but not crispy.

Advantage: The resulting "tobacco" is said to give a smoother smoke than thoroughly dried leaves.

Disadvantage: It is possible that this slow partial drying results in weaker leaves that may not keep as long as thoroughly dried (crispy) leaves.

- **Method 3.) Food Dehydrator**

Dry in a food dehydrator. These are available where small kitchen appliances are sold. Drying is very fast and thorough. Dry until the leaves, including the leaf stems, are crispy. Touch the leaves with your fingers to see if they are thoroughly dried. If they are, the leaf stems should snap if pressure is applied to it.

Advantages: speed, thorough drying, and convenience.

Disadvantage: Cost of buying a dehydrator.

- **Method 4.) Oven Dried Salvia**

Place on an oven-proof dish. Oven dry in an oven set at no more than 175 degrees F.

Advantage: speed, thorough drying, and convenience.

Disadvantages: Somewhat less convenient than using a food dehydrator. It may be hard to keep oven temperature at an optimal range.

- **Method 5.) Calcium Chloride (CaCl₂) Drying**

Calcium chloride is available from chemical supply houses, or as "Damp-Rid" refills, from most hardware stores. Place a sufficient amount of calcium chloride in the bottom of a polyethylene container. Place a piece of aluminum foil over but not touching the CaCl₂, and place the leaves to be dried on top of foil. Curling up the edges of the foil, should prevent the leaves from touching the CaCl₂. Then seal the container. The leaves should be dry in about two days.

Advantage: very thorough drying.

Disadvantages: less convenient than other methods. Slow.

However you dry the leaves, store them in a sealed jar away from light. A clean glass canning jar works very well (Mason jar). Storing the jar inside a kitchen cabinet or medicine chest will keep it away from light. Stored this way, leaves will retain their potency for many, many years.

IN CLOSING

Having read this far, you now know enough to start on Salvia's green path.

Whether you choose to is up to you. If you do, may you always find it a path with a heart. May this most remarkable teacher-plant guide you toward greater self-knowledge, harmony, wonder and joy. As you get to know this miraculous plant, please keep in mind that Salvia's fate is in your hands. For Salvia to remain legal, you and others must use it safely, responsibly, and privately.

The *Salvia divinorum* User's Guide

Version date: October 14, 2000

(The most recent version can always be found at: <http://salvia.lycaeum.org/usersguide.html>)

Created by "Sage Student", with contributions and HTML rendering by [Daniel Siebert](#)

WHY YOU WERE GIVEN THIS GUIDE

Perhaps a friend gave you a *Salvia divinorum* cutting, or maybe you bought dried leaves, an extract, or a living plant. If so, you need to read this guide. It was written to teach you how to work with this herb in a way that is personally rewarding, and how to do so as safely as possible. It will also teach you how to grow and care for your own *Salvia divinorum* plants.

Many more people are trying *Salvia divinorum* now than were several years ago. It is becoming both popular and controversial. *Salvia divinorum* is a powerful visionary herb--it is no placebo. But Salvia is unique. It is not "legal acid." It is not "legal pot." It is not a substitute for any other drug. It is not an analog of any other drug. It is extremely important that you know about its effects, its possible dangers, and how to avoid the dangers before trying it.

Do **NOT** use Salvia until you have read through this guide. NO MATTER WHAT OTHER DRUGS YOU MAY HAVE EVER USED, THEY DO NOT PREPARE YOU FOR SALVIA. SALVIA IS UNIQUE. Salvia has much to offer: fascinating psychoactive effects, sensual enhancement, magical journeys, enchantment, apparent time travel, philosophical insights, spiritual experiences, and perhaps even healing and divination , but Salvia is intolerant of ignorance. If it is used stupidly it can turn on you. By learning what is written here you can avoid serious trouble.

IT'S FREE

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This guide is updated frequently. The most recent version can always be found at: <http://salvia.lycaeum.org/usersguide.html>. I do not want to see obsolete versions floating around on the Internet. So please do not copy it to other web sites. If you want to make the guide accessible from another web site, simply include a link to the above URL.

JUST A BEGINNING

This guide is just a beginning. After reading it, you may wish to learn more. An excellent resource for additional information is *The Salvia divinorum Research and Information Center* web site at: <http://salvia.lycaeum.org>. This website, created by Daniel Siebert, provides a wealth of information, including:

- The most up-to-date version of *The Salvia divinorum User's Guide*.
- The *Salvia divinorum* FAQ.
- Images of *Salvia divinorum* plants and the chemical structure of salvinorin A.
- Experiential trip reports.
- Scientific papers and articles about *Salvia divinorum* .
- Links to many other Salvia sites.
- Information on joining various on-line *Salvia divinorum* discussion forums.
- *Salvia divinorum* inspired artwork.
- A calendar of conferences, seminars, and lectures.
- The virtual *Salvia divinorum* altar.

SALVIA DIVINORUM BASICS

Salvia divinorum is a species of sage (the genus *Salvia*). There are approximately 1000 species of sage worldwide, but *Salvia divinorum* is the only vision-inducing species known. *Salvia* is a member of a very large family of plants known as the Labiatae. Because mint is a well-known member of this family, it is sometimes referred to as the mint family. *Salvia divinorum* makes a beautiful house plant, and it can be grown just for that reason, but most people who grow this plant are interested in its fascinating psychoactive effects.

The botanical name *Salvia divinorum* means "Sage of the Diviners." Under the right conditions, taken in the right way, *Salvia* produces a unique state of "divine inebriation." For hundreds of years, it has been used in religious and healing ceremonies by the Mazatec Indians, who live in the province of Oaxaca, in Mexico.

At present (Sept. 29, 2000), neither *Salvia divinorum* nor its active principal, salvinorin A, are controlled substances anywhere in the world. It is completely legal to grow, buy, and sell *Salvia* plants or leaves.

The effects of *Salvia* are very different from those of alcohol; but like alcohol, it impairs coordination. **NEVER, EVER, ATTEMPT TO DRIVE UNDER THE INFLUENCE OF SALVIA--DOING SO COULD PROVE FATAL!**

In many ways *Salvia divinorum* is in a class by itself. No other herb or drug is really very much like it. It is misleading to compare it to other psychoactive substances. It is a truly unique visionary herb.

Salvia contains a chemical substance called salvinorin A (often referred to just as salvinorin). Salvinorin is responsible for *Salvia*'s mind-altering effects. It is not chemically related to any other psychoactive drug. Unlike most visionary compounds, it is not an alkaloid. Although it is not habit forming, pure salvinorin is extremely strong. Doses of only several hundred micrograms (millionths of a gram) will have an effect, and doses above 1 milligram (1/1000 of a gram) are too much for most people to handle comfortably. Because of its extreme potency, Salvinorin should never be used unless the dosage has been precisely measured with extremely accurate chemist's scales. Fortunately, *Salvia* leaf is hundreds of times weaker than pure salvinorin; therefore, *Salvia* leaf can be used much more safely than pure salvinorin.

Salvia leaf is physically quite safe. It is very gentle on the body. No one has ever died from a *salvia* overdose. *Salvia* is not a stimulant, it is not a sedative, it is not a narcotic, it is not a tranquilizer. Like many entheogens, it can induce visions, yet it is quite different from other entheogens. Dale Pendell, in his book *Pharmako/Poeia*, assigns *Salvia divinorum* to a unique pharmacological class, which he calls "existential." This term alludes to the philosophical illumination *salvia* seems to shine on the nature of existence itself. Daniel Siebert has proposed the term *enchantogen* --a neologism, meaning "a substance that produces enchantment." No one knows how salvinorin works in the brain. We do know it works differently than any other known psychoactive substance.

SALVIA IS NOT A PARTY DRUG

This is important to understand. *Salvia* is not "fun" in the way that alcohol or Cannabis can be. If you try to party with *Salvia* you probably will not have a good experience.

Salvia is a consciousness-changing herb that can be used in a vision quest, or in a healing ritual. In the right setting, *Salvia* makes it possible to see visions. It is an herb with a long tradition of sacred use. It is useful for deep meditation. It is best taken in a quiet, nearly darkroom; either alone (if a sitter will not be used, see below for discussion of sitters), or with one or two good friends present. It should be taken either in silence or (sometimes) with soft pleasant music playing.

SALVIA TRIPS: WHAT TO EXPECT

Salvia trips range in intensity from subtle, to extremely powerful. This holds true for chewed leaves and smoked leaves, and for oral tinctures, such as "Sage Goddess Emerald Essence®." The strength of the trip will depend on how much you take, the way you take it, and your individual body chemistry.

Salvia trips differ from those produced by other visionary drugs or herbs, and *Salvia* has many advantages:

- You cannot take a fatal overdose of *Salvia* leaves.
- *Salvia* is not habit forming.
- *Salvia* is legal.
- Its effects are brief in duration, so you quickly return to normal.
- *Salvia* seldom produces adverse side-effects or hangover.

Noise and distraction will interfere with the trip. When on *Salvia*, watching TV is nothing but annoying; sitting around a campfire in the woods at night, is wonderful.

Because *Salvia divinorum* can alter perception and behavior, it must never be used in a public environment--doing so would draw unwelcome attention.

Especially if you are not used to it, or are taking a potent preparation like an extract, you should have a sober baby sitter there to make sure that you don't do something dangerous, like knocking over lit candles, or walking out a window.

When Salvia is smoked the effects come on very quickly: in less than a minute. When it is chewed the first effects come on at about 15 minutes and full effects at about 30 minutes. If taken as a tincture held in your mouth, the effects come on in 15 minutes or less. Usually a Salvia trip lasts from 15 minutes to an hour. Occasionally trips may last up to 2 hours. To be on the safe side, it is important not to drive or use machinery for several hours after the trip appears to be ended.

Most people have no hangover from Salvia; however, some people sometimes report a mild headache. If Salvia is smoked the smoke may irritate your lungs.

Salvia trips seem to occur in levels. The so-called S-A-L-V-I-A scale has been constructed to rate trips. Each letter of the word *SALVIA* stands for another level of tripping. The scale describes six different levels of intoxication, each one more intense than the previous. The overall intensity of Salvia trips is scored according to the highest scale level attained during the course of the trip.

S-A-L-V-I-A Trip Rating Scale

Level - 1 "S" stands for SUBTLE effects. A feeling that "something" is happening, although it is difficult to say just what. Relaxation and increased sensual appreciation may be noted. This mild level is useful for meditation and may facilitate sexual pleasure.

Level - 2 "A" stands for ALTERED perception. Colors and textures are more pronounced. Appreciation of music may be enhanced. Space may appear of greater or lesser depth than is usual. But visions do not occur at this level. Thinking becomes less logical, and more playful; short-term memory difficulties may be noted.

Level - 3 "L" stands for LIGHT visionary state. Closed-eye visuals (clear imagery with eyes closed: fractal patterns, vine-like and geometric patterns, visions of objects and designs). The imagery is often two dimensional. If open-eyed visual effects occur, these are usually vague and fleeting. At this level, phenomena similar to the hypnagogic phenomena that some people experience at sleep onset occur. At this level, visions are experienced as "eye candy" but are not confused with reality.

Level - 4 "V" stands for VIVID visionary state. Complex three-dimensional realistic appearing scenes occur. Sometimes voices may be heard. With eyes open, contact with consensual reality will not be entirely lost, but when you close your eyes you may forget about consensus reality and enter completely into a dreamlike scene. Shamanistic journeying to other lands--foreign or imaginary; encounters with beings (entities, spirits) or travels to other ages may occur. You may even live the life of another person. At this level you have entered the shaman's world. Or if you prefer: you are in "dream time." With eyes closed, you experience fantasies (dream like happenings with a story line to them). So long as your eyes are closed you may believe they are really occurring. This differs from the "eye candy" closed-eye imagery, of level 3.

Level - 5 "I" stands for IMMATERIAL existence. At this level one may no longer be aware of having a body. Consciousness remains and some thought processes are still lucid, but one becomes completely involved in inner experience and loses all contact with consensual reality. Individuality may be lost; one experiences merging with God/dess, mind, universal consciousness, or bizarre fusions with other objects--real or imagined (e.g. experiences such as merging with a wall or piece of furniture). At this level it is impossible to function in consensual reality, but unfortunately some people do not remain still but move around in this befuddled state. For this reason a sitter is essential to ensure the safety of someone voyaging to these deep levels. To the person experiencing this the phenomenon may be terrifying or exceedingly pleasant; but to an outside observer the individual may appear confused or disoriented.

Level 6 - "A" stands for AMNESIC effects. At this stage, either consciousness is lost, or at least one is unable to later recall what one had experienced. The individual may fall, or remain immobile or thrash around; somnambulistic behavior may occur. Injuries can be sustained without pain being felt; on awakening, the individual will have no recollection of what he/she did, experienced, or said in level 6. People cannot recall what they experience in this very deep trance state. This is not a desirable level, because nothing can later be recalled of the experience.

METHODS OF USE

Salvia is never taken by injection. There are many different methods of use. Several will be discussed here.

TRADITIONAL MAZATEC METHODS

The two traditional Mazatec methods are quite inefficient in that they require many more leaves than do the other methods. But they are very safe. Traditionally the leaves are taken in a semi-darkened room as part of a healing or religious ceremony. At least one sober person is present to watch over the people who have taken Salvia. A water-based drink made from ground-up fresh leaves is one of the traditional Mazatec ways of using this herb. It requires a lot of leaves and tastes somewhat

unpleasant, so this method is seldom used by non-Mazatecs. Salvinorin is very poorly absorbed from the stomach so it requires enormous amounts of leaves to make the drink effective. But it does work, and trips from the drink last longer than from any other method. Chewing and swallowing a large number of fresh leaves is the other Mazatec method. When this is done the leaves are nibbled slowly for about 1/2 hour. Although the chewed-up leaves are swallowed, most of the effect is due to salvinorin that is absorbed through the tissues of the mouth during the chewing. This is a less efficient way of chewing Salvia than the quid method (see below). Most people find chewing and swallowing fresh leaves to be unpleasantly bitter, and for some, it causes gagging.

MODERN METHODS

THE QUID METHOD:

A ball or cylinder of rolled-up leaves is made. This is called a quid. It is to be chewed. The leaves are chewed slowly--about one chew every 10 seconds. They are kept under your tongue between chews. For half an hour keep the quid that is being chewed, and the juice that forms, in your mouth. If you can, hold it in your mouth without spitting or swallowing. Then, after the half-hour chewing time is over, spit it all out. Have a bowl to spit into, and a towel handy. Salvia juice stains carpets and other fabrics, so be sure the bowl won't tip over.

Quids can be made from either fresh leaves or dried leaves. Those made from dry leaves are less bitter. To make a quid from dried leaves, weigh out 2-8 grams of dried leaves. A gram scale accurate enough for this can be purchased for under \$50. If you have no scale, count out 8 to 28 large whole dried leaves. Place the leaves in a small bowl of cool water for 10 minutes. Once the leaves are wet and have been soaking for about 10 minutes, remove the leaves from the water, squeeze the excess water out of them, and ball them up into a quid. Some people skip this soaking step when they are in a hurry, but chewing on brittle dry leaves may be unpleasant. If you wish, you can sweeten the quid with sugar, honey, Stevia extract or an artificial sweetener like Equal®. This will make it less bitter and more pleasant to chew.

If fresh leaves are used instead of dry ones, you will need from 8 to 28 large fresh leaves.

The effect of Salvia quids can probably be increased by first treating your mouth in a special way to increase its ability to absorb salvinorin. To do this you will need a toothbrush and an alcohol/menthol containing mouthwash such as Cool Mint Listerine®, (or any other brand that contains alcohol and menthol). Gently brush the lining of your mouth, including the tissue under your tongue, and the top surface of your tongue. This removes layers of dead cells normally present. Do not brush hard enough to cause bleeding. Then rinse with the mouthwash for at least 30 seconds. Be sure to get mouthwash everywhere in your mouth, including under your tongue. Then spit out the mouthwash and rinse once with water.

You will experience very little in the first 12 to 15 minutes of chewing. don't be misled by this. Full effects are usually felt by 30 minutes (the time you spit out the quid). They remain on this level for about 20 minutes more, then start to decrease. The whole trip seldom lasts much longer than an hour and a quarter, but this varies.

SMOKING:

Dried leaves can be smoked in a pipe. They need to be smoked hot and the smoke must be inhaled deeply and quickly to have an effect. Because salvinorin requires high temperatures to vaporize, it is best to hold a flame immediately above the leaves, drawing it down into the leaves the whole time you inhale. The leaves can be smoked in a short-stemmed tobacco pipe, in a bong, or in a "steamroller" pipe. Fill up a medium size bowl with leaves. Use a hand-held butane lighter that will go out when you are no longer pressing it, not a match. Have a large ashtray or tip-proof bowl to set the pipe in when you feel you've had enough. Remember that when tripping you may forget you are holding a lit pipe. You could drop it, causing a burn or a fire; therefore, it is best to have a sitter present when smoking. First effects will be noticed within a minute of inhaling. After 5-6 minutes the effects will gradually begin to subside. The total duration of the trip may be less than 30 minutes or as long as an hour.

Extract-enhanced leaves can also be smoked. Extract-enhanced leaves can be very strong and should only be smoked when a sitter is present. It is possible to vaporize leaves or extract in a special vaporizer that heats up material without burning it. Vaporization can be deceiving. Because very little smoke is produced, it is possible to inhale a very large dose without realizing it. Anyone trying vaporization absolutely MUST have a sitter present. Many commercial vaporizers made for Cannabis will not work for Salvia. Special Salvia vaporizers can be built easily, but vaporization is not for those new to Salvia.

Vaporization of pure Salvinorin is also possible. It is definitely not for beginners! Unless the dose has been measured very precisely, this is extremely dangerous, as it's very easy to vaporize too large a dose. To be done safely, vaporization of salvinorin requires weighing the dose on a very precise chemical balance capable of weighing salvinorin in micrograms (millionths of a gram). These analytical balances cost well over \$1000. But there are now available standardized doses of Salvinorin on leaves, using such preparations enables one to inhale a known precisely measured dose of salvinorin. This allows someone to experiment with salvinorin without having to buy an analytical balance, and greatly reduces the risk of overdose.

There is now a commercially available Salvia tincture. It is marketed by Daniel Siebert as "Sage Goddess Emerald Essence®." This fluidextract of *Salvia divinorum* is intended to be kept in one's mouth until its salvinorin content has been absorbed. While it can be taken undiluted, it is quite irritating to the mouth if taken in this way. The irritation is due to its high alcohol content. It is better to take it diluted with hot water. The amount of alcohol taken even in a large dose of the extract is not sufficient to produce alcohol intoxication. The effect of the tincture is that of Salvia, not that of whiskey. The alcohol is in the tincture solely as a solvent. The tincture

comes with two droppers, one for the tincture, and a different one for the hot water. And comes with detailed instructions regarding its use and appropriate dosage. A simple method of using the extract is to dispense the measured dose into a small glass such as a shot glass and then add an approximately equal volume of water that has been heated to the temperature at which one drinks coffee. Immediately after mixing the two, sip the contents of the shot glass, and hold it in your mouth without swallowing. Keep your tongue elevated above the floor of your mouth to allow the sublingual tissues (those under the tongue) to absorb the salvinorin. This means keeping the liquid in your mouth until either the desired effect has been reached or 1/2 hour has passed. Then swallow it or spit it out, whichever you wish.

WHICH METHOD IS BEST?

There are pros and cons to each method. Some people report that a quid gives a stronger, deeper, more visionary trip than smoking. Others report that chewing doesn't work for them at all, but smoking does. For those who get little effect from either method, the two methods can be combined. First chew a quid, and then, after spitting it out, light up. If you already smoke tobacco or Cannabis you will probably be comfortable with smoking Salvia. If you are a non-smoker you will probably prefer the quid method. Bear in mind that smoking anything, even Salvia, can't be good for your lungs. Unlike smoke, orally consumed Salvia does not irritate your lungs.

It requires quite a bit more dried leaf for a quid trip than for a smoke trip. If you have very little leaf material available, smoking is the way to get a trip out of the little you have.

Quid trips come on slowly but last longer. They are better for exploring Salvia's world. They are better for deep meditation.

Salvia tincture (e.g. "Sage Goddess Emerald Essence®") has the same effects as a quid trip, however the dosage can be adjusted more precisely, the effects come on somewhat faster, and holding the not unpleasant tasting tincture in one's mouth is much nicer than holding chewed up leaves in your mouth. The only side-effects reported that are unique to the tincture have been "burning" of the lining of one's mouth. This occurs if the alcohol in the tincture has not been sufficiently diluted. It may leave one's mouth mildly sore the next day, in much the way that it would be if you drank soup that was scalding hot. This problem can be prevented by diluting the tincture with enough water.

Until you know how sensitive to Salvia you are, do not experiment with extracts, vaporizers, or salvinorin. Chewing quid, using tincture, or smoking leaves, will take many people all the way to level 5. There is no need for these people to experiment with stronger and more dangerous ways of taking Salvia.

There are some people--albeit a minority--who, even after many experiments, find they remain "Salvia-hardheads." They never experience more than a slight Salvia effect from smoking, or from a quid. Some of these hardheads will get satisfactory results if they chew a quid, and then immediately smoke after spitting out the quid. Others will find even this ineffective. For them, extract-enhanced leaves are necessary to produce effects. See how sensitive you are before experimenting with stronger forms of Salvia. With a little practice, quid chewing, or smoking, or combining the two ("boosting"), works quite well for most people. Many people find it takes several meetings with Salvia before a "breakthrough" experience occurs. So don't label yourself a "Salvia-hardhead" too soon.

SITTERS and SAFETY

WHEN YOU NEED A SITTER

A sitter is absolutely essential if you are taking doses on which you may freak out, become confused, injure yourself, fall, set your house on fire, or do anything that might harm others. Have a sitter present if you are new to Salvia, are experimenting with a stronger form than you have used before, or are using a more powerful way of taking it.

An experienced Salvia user who is chewing a quid, may often choose to do it alone, and may be quite safe in doing so. But having a pleasant, sensible, sober sitter is an absolute must if you are trying vaporization, smoking extract enhanced leaves, or using pure salvinorin. Smoking leaves usually falls in between in terms of risk. Many people do so without a sitter, but a sitter is never a bad idea. Use sound judgment.

WHAT A SITTER SHOULD KNOW AND DO

The sitter must remember that no matter how crazy the tripper acts, Salvia trips are short lived. don't take the tripper to the emergency room (unless, of course, there is a true medical emergency). Keep the person safe and wait it out. If you can't keep the person safe, get help. Otherwise keep the matter private. Within an hour or so (usually much less) the tripper will be back to normal. It's very reassuring to hold onto this knowledge if things get messy. It helps to have experienced Salvia yourself before baby-sitting another person. Experience with other visionary materials may be only partially helpful. The sitter should know that Salvia is different from these. Touching to "ground the tripper" works for some trippers on some entheogens, but may be very threatening for someone on Salvia. If you plan on touching, clear it with the tripper BEFORE the trip starts.

THE ROLES OF THE SITTER

The sitter has three jobs:

The most important job is to keep the tripper, and others who may be present, safe. This comes before all else. The main danger is accidental injury. Your job is to be a gentle guardian. Be as unobtrusive as possible, but remain alert incase the tripper should suddenly start moving about recklessly. Do not use physical force unless nothing else will do. Use of physical force may result in the tripper or you getting hurt. It could be misinterpreted as an assault. NEVER LET SALVIA BE USED WHERE FIREARMS, KNIVES, OR OTHER DANGEROUS OBJECTS ARE PRESENT. Take the tripper's car keys for safe keeping before the trip starts. Keep the tripper safe from falls, head banging, sharp objects, walking into walls, walking into furniture, walking through windows, wandering out into the street or other public areas, open flames, hot surfaces, and breakable objects. But let the tripper move about in a safe area. Do not grab or try to physically restrain him/her, unless absolutely necessary. Redirect. Speak softly. Gently take dangerous objects away. Use the minimum touching necessary (the confused tripper may think your touching is an assault or rape and react to the imagined danger). You may have to handle unexpected intrusions of strangers and other awkward social situations.

The second job of the sitter is to reassure. Often, simple repeated explanations may help a frightened tripper, e.g. "You're safe, I won't let anything harm you." "You're just having a bad trip, you'll feel better in a few minutes." "Your name is....." "I'm your friend" If speech is not called for, be silent. Silence is often less threatening to the confused tripper than trying to decipher what a sitter is saying.

The third job of the sitter is to help the tripper later recall the trip. There are several ways. Use a notebook and record all the tripper's odd doings and sayings. Later you can ask about these. This may help jog the person's memory about what was experienced. Another technique, if the tripper is not too far gone to talk during the trip, is to ask repeatedly "what are you experiencing now?" A notebook, or a tape recorder, can be used to record responses. Since some trippers will prefer that you remain silent and don't record, clear it with the tripper in advance.

COMMON SENSE GUIDELINES

- NEVER USE SALVIA IF GUNS, KNIVES, OR OTHER DANGEROUS OBJECTS ARE WITHIN EASY REACH.
- NEVER DRIVE WHEN TAKING SALVIA.
- Choose the time and place of your trip carefully. Privacy and safety are essential. Be very careful about heights, and open flames such as candles. Do not take Salvia when you may be interrupted by phone calls, visits, pets, children, etc. Turn off your telephone and set your answering machine to silently record incoming calls. You can return the calls in a couple of hours once you are sober.
- Give careful thought to how much you will take, and how you take it.
- After all smoking material is safely out, lie down in bed, on a couch, or on a carpet. You are much safer lying down than you would be stumbling around. Stay put for the rest of the trip. You can trip best with your eyes closed.
- Have a sitter (this is especially important if you are new to Salvia, taking a high dose, smoking extract, or using a very strong delivery system such as vaporization).
- Volunteer to be a sitter for others.
- If you have mental health problems, don't take Salvia without first discussing it with your therapist, or doctor.
- Practice and encourage responsible use. don't give Salvia to minors, or to violent or unstable people. don't share it with strangers. Know who you are giving it to and know why they want to use it. Why ask for trouble?
- Never take Salvia while at work or in public. Keep it private. It's not for concerts. It is not for raves. It's not for large noisy parties. Better to use it in a quiet safe private place in the company of a few good friends.
- Mixing Salvia with other drugs or large amounts of alcohol may cause out-of-control behavior, or terrifying trips. While experienced Salvia users have experimented with combinations, these are not for Salvia beginners, and are certainly riskier than just using Salvia by itself. While there are no known toxic drug-drug interactions between Salvia and anything else, this has not been studied scientifically.
- Be extra careful of flames (candles, lighters, fire, etc.) when using Salvia.
- Be very careful about using vaporized extracts, vaporized leaves, or smoking extract enhanced leaves. These require a sitter to be present. Chewing quid or smoking leaves is much less likely to produce out-of-control behavior than these are.
- Never use pure salvinorin unless the dose you are taking has been weighed with an ultra-accurate balance that can weigh out doses in micrograms, and you know exactly how much you can safely take. Even if you do meet these requirements, you still should have a sitter present.

THE PLANT AND ITS CARE

If you will be growing your own Salvia, you should read this. If you will not be growing your own, you may wish to skip this section.

Salvia divinorum is a semi-tropical perennial. That means that it can grow year after year, but only if it is not exposed to freezing temperatures. It is a green plant with large leaves and a distinctive thick, hollow, square green stem. It can grow several meters (yards) high if conditions are favorable. When it grows high enough, the branches will bend, or break, and may root if they come in contact with moist earth. Although *Salvia divinorum* can flower under natural lighting conditions, it almost never sets seed that will sprout. So the plant is almost always propagated by cuttings. The leaves are oval, weakly notched (serrated) and can be quite large (up to 9 inches in length). They are usually emerald green, but under some conditions, may be yellow-green or even yellow. They are covered with a fine coating of extremely

short hairs (trichomes), giving the leaves a satin like velvety appearance in certain lights. The plants grow best in partial shade, in well-watered, but well-drained, soil. The roots must not be kept constantly soaked, or root-rot will set in and kill the plant.

Salvia divinorum can be grown indoors in any climate. It makes a beautiful house plant.

You can grow *Salvia divinorum* outdoors all year round if you live in a humid semi-tropical climate, with well-watered, but well-drained soil, with a high humus content. If you live in a colder or drier climate, you can still grow *Salvia* outdoors, weather permitting. But you may have to do it with some care, making sure it is protected from frost, watered frequently, and misted when humidity is low. *Salvia* will not live through freezing or drought. It can be grown outdoors in pots which can be brought indoors when it is cold (below 40 degrees Fahrenheit). That way it can be grown outdoors in summer and indoors in winter.

Salvia will tell you when it is getting too dry: its leaves will droop. Be sure to water it at the first sign of mild drooping--do not let the plant become limp. The soil should drain well but should be kept moist. If planting *Salvia* in pots, make sure the pot is large enough to allow the plant to grow well. Although your available space will limit possible pot size, use the biggest pot that is practical. It must have drainage holes. Placing gravel (or broken up pieces of crockery) in the bottom of the pot will help promote drainage and thus discourage root-rot. Most commercial potting soil will work well. Adding Vermiculite® or Perlite® to the potting soil is helpful but not essential.

Salvia will need fertilizer. Any good general-purpose fertilizer will work. Fish emulsion is a good organic fertilizer choice, but because it has a very unpleasant odor, it is suitable only for outdoor use. Satisfactory results can be achieved with chemical fertilizer products. Some of them are:

Scott's® All-Purpose Plant Food (18-13-13) lightly sprinkled on the soil about once every six weeks. Miracle-Grow® (15-30-15) or MirAcid® (30-10-10) added to the water once a week (1/4 tsp. per gallon). Peter's® Professional Soluble Plant Food (15-30-15) 1/4 tsp. to gallon of water once per week.

If growing indoors, take the plants outdoors when it is warm enough, and let rain fall on them. This will prevent mineral salts from building up in the soil and killing your plant

Salvia divinorum can do well in a variety of different lighting conditions. It does best with a few hours of partial sunlight a day. It can do well when grown indoors near a window. It can handle more sun if kept well watered and misted frequently. It can also handle moderately deep shade. When changing the lighting conditions or the humidity conditions your plants are exposed to, do so gradually. Given enough time, *Salvia* is very adaptable, but it may take weeks to get used to a new environment.

Many pests can attack *Salvia*. Whitefly is a big problem for greenhouse grown plants. Aphids, slugs, caterpillars, thrips, spider mites, and scale insects can also damage your plants. Root-rot and stem-rot can be problems. Fungal spots can appear on leaves. It is not known which plant viruses attack *Salvia divinorum*, but probably some do, as many attack other sages.

Aphids and scale insects can be removed with a cotton swab dipped in isopropyl (rubbing) alcohol.

Slug damage can be reduced by growing *Salvia* in pots on a raised deck or palette. Some may still get by and attack your plants. Keep an eye out for these slimy pests. One slug can eat an awful lot of *Salvia*! Beer can be used to attract and drown slugs. Set a saucer of beer in a slight depression in the ground; the surface of the saucer should be flush with the soil, so slugs can get in, get drunk, and drown.

Spider mites can be controlled by dissolving Castile soap in water and spraying the leaves, including the underside. Repeat at two-week intervals for three applications. Caution: there have been some reports of soap damaging leaves, so don't use too much.

Your garden hose is your best friend in fighting most outdoor pests. Spray the leaves hard enough to blow the pests away, but not hard enough to damage the leaves. don't forget to spray the underside of the leaves too. A fine mist nozzle works best for this.

Salvia divinorum is usually propagated by cuttings, not by seed. Cuttings may be rooted either in water or directly in soil. Here's how:

ROOTING IN WATER:

Cut off a branch (4-8 inches long) bearing some leaves. Cut off the leaves that are attached to the lowest node on your cutting then immediately place it in about one and a half inches of water in a small water glass. Only one cutting is to be put in each glass, so if rot develops in one cutting it cannot spread to another.

It is best if the cutting is cut back to just below a node, since nodes are the places from which new roots are most likely to develop. While it is not necessary to make the cut here, doing so has the advantage that there will be no stem material dangling in the water below the node. This is important as the cut stem end is more likely to

start to rot than is a node.

Make sure the cutting is made with clean shears, or a knife, so the cut stem does not get attacked by germs and fungi that could cause stem rot. Place it where it will get some filtered sunlight. Change the water daily. It may be a good idea to use cooled boiled water. If your water is chlorinated, boiling will drive off chlorine. Non-chlorinated water may be contaminated with plant disease germs, but boiling should kill these. Rooting in water is successful about 75% of the time (the rest of the time stem rot occurs and kills the cutting).

In two weeks roots will start to develop. When they are about 1/2-1 inch long, transplant to potting soil in a well-drained pot. Cover with a clear glass jar or clear plastic bag to serve as a humidity tent until the plant establishes its roots in the soil and appears vigorous (usually 1-2 weeks). Then gradually wean the plant from dependence on the humidity tent.

Some growers report that Salvia branches that break off spontaneously in summer are more likely to root successfully than those deliberately cut. Rooting in water outdoors may decrease the chance of stem rot occurring. apparently the UV light in unfiltered sunlight acts to kill germs or fungi in the water.

ROOTING IN SOIL:

Salvia can be rooted directly in soil. Materials needed:

- Potting soil.
- Two disposable plastic cups.
- Some Rootone® powder (this is a rooting hormone mixture that also contains a fungicide) it is available at most nurseries in the United States.
- A 1-gallon thin, transparent, polyethylene food storage bag.
- A rubber band.
- Water.

METHOD:

Punch some small holes in one of the cups for drainage. Fill the cup 2/3 the way up with potting soil. Using a pencil or a finger make a hole in the soil about 2 inches deep. The soil is now ready for your cutting. You must now prepare the cutting. With clean shears, cut off a length of stem from a healthy plant. Leave a few leaves (small ones) on top. Harvest the larger leaves from the cut-off stem. Immediately after cutting the stem, place it in clean water. Cut it back to just below a node, as roots will develop from the node. Keep the cut surface wet. Place the cut surface, and the stem for about 1 inch above the cut, into the rooting powder. Shake off the excess. Rooting powder is somewhat toxic, so wash your hands after handling it. Place the powder coated cutting in the hole in the soil. Gently push the soil around the cutting, holding it in place while filling in the hole. Water the planted cutting until some water runs out the drainage holes. Place the cup with the plant in it into the second plastic cup (which is there to catch any runoff water). You may want to put a small piece of wood or plastic in the bottom of the outer cup to act as a spacer. This allows enough space for excess water to drain. Place a 1-gallon clear plastic bag over the rooted cutting, using a rubber band to hold it in place. The rubber band should be outside the bag and the bag outside both cups. The Rubber band holds the bag against the cups. As the plastic bag acts to conserve moisture, frequent watering is not required. After several weeks you can transplant the now rooted plant to a larger pot.

PROCESSING PLANT MATERIAL

Dried *Salvia divinorum* leaves should be stored in sealed containers away from light. Stored this way, the leaves will retain their potency for many, many years, perhaps indefinitely (nobody knows just how long). If you are growing your own, you will probably want to dry leaves for future use. There are several ways to do this.

○ **Method 1.) Nature's Bounty**

Wait until the leaves die or are shed. Gather them. Place them on a plate in a room with low humidity. Turn often. Wait until they are dry, then store. It is not known if naturally shed leaves are stronger or weaker than picked leaves.

Advantage: you won't be depriving your plants of leaves it needs.

Disadvantage: you will have to wait until the plant is ready to make a donation to your cause. Leaves may not be in prime condition.

○ **Method 2.) Salvia "Tobacco"**

Take big, freshly picked leaves and place one atop another (like stacking sheets of paper). Then cut through the pile, making 1/2 cm. (1/4 inch) strips. Pile these on a plate into a heap. Turn them twice daily until they are dry but not crispy.

Advantage: The resulting "tobacco" is said to give a smoother smoke than thoroughly dried leaves.

Disadvantage: It is possible that this slow partial drying results in weaker leaves that may not keep as long as thoroughly dried (crispy) leaves.

○ **Method 3.) Food Dehydrator**

Dry in a food dehydrator. These are available where small kitchen appliances are sold. Drying is very fast and thorough. Dry until the leaves, including the leaf stems, are crispy. Touch the leaves with your fingers to see if they are thoroughly dried. If they are, the leaf stems should snap if pressure is applied to it.

Advantages: speed, thorough drying, and convenience.

Disadvantage: Cost of buying a dehydrator.

○ **Method 4.) Oven Dried Salvia**

Place on an oven-proof dish. Oven dry in an oven set at no more than 175 degrees F.

Advantage: speed, thorough drying, and convenience.

Disadvantages: Somewhat less convenient than using a food dehydrator. It may be hard to keep oven temperature at an optimal range.

○ **Method 5.) Calcium Chloride (CaCl₂) Drying**

Calcium chloride is available from chemical supply houses, or as "Damp-Rid" refills, from most hardware stores. Place a sufficient amount of calcium chloride in the bottom of a polyethylene container. Place a piece of aluminum foil over but not touching the CaCl₂, and place the leaves to be dried on top of foil.

Curling up the edges of the foil, should prevent the leaves from touching the CaCl₂. Then seal the container. The leaves should be dry in about two days.

Advantage: very thorough drying.

Disadvantages: less convenient than other methods. Slow.

However you dry the leaves, store them in a sealed jar away from light. A clean glass canning jar works very well (Mason jar). Storing the jar inside a kitchen cabinet or medicine chest will keep it away from light. Stored this way, leaves will retain their potency for many, many years.

IN CLOSING

Having read this far, you now know enough to start on Salvia's green path. Whether you choose to is up to you. If you do, may you always find it a path with a heart. May this most remarkable teacher-plant guide you toward greater self-knowledge, harmony, wonder and joy. As you get to know this miraculous plant, please keep in mind that Salvia's fate is in your hands. For Salvia to remain legal, you and others must use it safely, responsibly, and privately.


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LE GUIDE D'UTILISATION DE LA SALVIA DIVINORUM

DATE DE LA VERSION : 11 avril 1999

L' auteur de ce guide, "Sage Student", désire demeurer anonyme.

(HTML rendu par [Daniel Siebert](#))

Information additionnelle sur la Salvia divinorum disponible à :
<http://sagewisdom.org/>

Note du traducteur : J' ai traduit ce texte sans prétention. Je ne suis pas traducteur de métier. Je ne maîtrise pas d' avantage les 2 langues en question. Je n' ai que grossièrement (quoique le plus fidèlement possible) traduit ce document pour que la connaissance rejoigne le plus de gens possible. Les expressions en caractère gras sont celles dont je ne suis pas sur d' avoir fidèlement traduites.

- Krako

LE POURQUOI DE CE GUIDE

Peut-être qu' un(e) ami(e) vous a donné une bouture de Salvia divinorum ou peut-être avez-vous acheté des feuilles séchées ou une plante vivante. La Salvia divinorum n' est pas un placebo. C' est comme un tapis volant magique qui peut vous emmener dans des domaines que vous ne pouvez concevoir. Si tout à coup vous trouviez un tapis volant magique, vous pourriez apprécier qu' un livre d' instruction l' accompagne. Supposez qu' il y en ait un. Comme vous êtes aventureux(se) mais pas stupide, vous liriez les instructions avec soin avant d' essayer de voler. Vous lisez présentement un guide d' utilisation pour le tapis volant appelé Salvia.

N'UTILISEZ PAS la Salvia avant d'avoir lu ce guide d'un bout à l'autre. Si la Salvia est utilisée de manière stupide, elle peut se retourner contre vous. En apprenant ce qui est écrit ici, vous pouvez éviter les dangers.

Ce guide a été écrit pour vous donner de l'information que vous avez besoin pour utiliser la Salvia de manière sécuritaire et pour vous enseigner comment faire pousser vos propres plants de Salvia.

C'EST GRATUIT

Personne n'aurait dû vous facturer pour ce guide. Il devrait être donné gratuitement aux gens chaque fois que des plants ou des feuilles sont donnés ou vendus. Personne ne devrait en faire du profit. Il a été écrit en tant que service public. L'auteur ne recevra aucune redevance.

COPIEZ GRATUITEMENT ET COMPLÈTEMENT

Ce guide devrait être donné sans frais à quiconque est intéressé à la Salvia.

S.V.P. COPIEZ CE GUIDE mot à mot. Donnez-le sans frais à tous ceux et celles avec qui vous partagez des feuilles ou des plants. Si vous le copiez, copiez le TOUT. Ne le changez pas. Fournissez-le tel quel. À mesure que l'on en saura d'avantage sur la Salvia, ce guide peut être changé. Pour cette raison, il est important que la DATE DE LA VERSION (ci-dessus) soit incluse dans la copie que vous donnez. De cette façon, la personne qui l'aura sera capable de savoir si sa copie est à date.

CE N'EST QU'UN DÉBUT

Ce guide n'est qu'un début. Après l'avoir lu, vous pourriez souhaiter en savoir d'avantage. Une excellente façon de le faire est d'aller voir Daniel Siebert's Salvia Pages sur le réseau Internet. L'adresse est:

<http://sagewisdom.org> on y retrouve une abondance d'information, incluant :

A la FAQ de la Salvia (en anglais),

A une liste de fournisseurs de Salvia,

A des photos de plants de Salvia et de la structure chimique de la **salvinorine**,

A des comptes rendus de voyages,

A des références à des écrits scientifiques,

A des liens vers beaucoup d'autres sites sur la Salvia,

A de l'information pertinente à l'adhésion à la très active liste de distribution sur la Salvia.

LA BASE DE LA SALVIA DIVINORUM

La Salvia divinorum est une plante faisant partie des nombreuses espèces de sauge (Salvia). Les vraies sauges sont membres de la famille des menthes. Ce qui fait que la Salvia divinorum est dans la famille des menthes. Elle fait une très belle plante de maison (et on peut la faire pousser seulement pour ça),

mais la plupart des gens qui font pousser cette plante sont intéressés à ses effets **psychoactifs** fascinants.

Le nom Salvia divinorum signifie 'Sauge des devins'. Dans les conditions idéales, prise de la bonne façon, la Salvia produit un état d'ivresse

divine@ unique. Pendant des centaines d'années, elle a été utilisée dans des cérémonies religieuses et curatives par les indiens Mazatèques, vivant dans la province d'Oaxaca, au Mexique.

Présentement (10/7/98) ni la Salvia, ni la substance **Salvinorine-A** qu'elle contient, sont inventoriées aux États-Unis. Il est légal de faire pousser, de vendre et d'acheter des plantes ou des feuilles de Salvia.

Les effets de la Salvia sont très différents de ceux de l'alcool; affaiblie votre habilité à conduire et diminue votre coordination. Conduire sous l'influence de la Salvia est très stupide.

La Salvia divinorum est à la fois semblable et différente des autres substances qui affectent l'esprit. De plusieurs façons, la Salvia divinorum est dans une classe à part. Aucune autre herbe, aucune autre drogue est vraiment comme la Salvia. La Salvia n'est pas du >pot légal'. Non plus est-ce de l'>acide légal'. La Salvia est la Salvia. C'est une >**herbe visionnaire'** unique.

La Salvia contient une substance chimique appelée **salvinorine-A** (habituellement identifiée simplement sous le nom de salvinorin). La **salvinorine** cause l'effet perturbateur de l'esprit de la Salvia. Elle n'est pas chimiquement reliée au LSD, au DMT, à l'Ecstasy, au THC ou à toute autre drogue. Elle n'est pas un alkaloïde.

Bien qu'elle ne crée pas de dépendance, la **salvinorine** pure est extrêmement forte. Des doses de seulement quelques centaines de microgrammes (millionièmes de gramme) auront un effet et, pour la plupart des gens, des doses de plus d'un milligramme (1/1000 de gramme) sont trop fortes pour être supportées. Heureusement, la feuille de Salvia est des centaines de fois plus faible que la **salvinorine** pure. Ce qui fait qu'il est plus facile d'utiliser de façon sécuritaire la feuille de Salvia qu'il le serait pour la **salvinorine** pure.

La feuille de Salvia est tout à fait sécuritaire au point de vue physique. Personne n'est jamais mort d'un trop grande dose de Salvia. La Salvia n'est ni un stimulant, ni un sédatif, ni un narcotique, ni un tranquillisant. Tout comme les psychédéliques, elle peut produire des visions. Mais elle diffère des soit-disant >psychédéliques classiques' (LSD, psilocybine et mescaline) de plusieurs façons. Personne ne sait comment la **salvinorine** agit sur le cerveau. Par contre, on sait qu'elle agit différemment de toutes les autres substances connues.

LA SALVIA N'EST PAS UNE DROGUE POUR FAIRE LA FÊTE

Il est important de le comprendre. La plupart des gens ne trouvent pas la Salvia amusante de la façon que l'alcool ou la marijuana peuvent l'être. Si vous essayez de faire la fête avec la Salvia, vous ne vous amuserez probablement pas.

La Salvia est une herbe altérant la conscience qui peut être utilisée dans la recherche d'une vision ou dans un rituel curatif. Dans le bon décor, la Salvia offre la possibilité d'avoir des visions. C'est une herbe qui a une tradition d'usage sacré; une herbe pour la méditation profonde. Il vaut mieux la prendre dans une pièce silencieuse, sombre, soit seul(e) (si un gardien n'est pas requis --- voir plus bas), ou avec 1 ou 2 bon(nes) ami(es) présent(es). Elle est prise soit en silence ou (quelquefois) avec de la musique douce et plaisante.

LES VOYAGES DE SALVIA - À QUOI S'ATTENDRE

Les voyages de Salvia peuvent être intenses ou faibles. Cela est vrai autant pour les feuilles mâchées que pour les feuilles fumées. L'intensité du voyage dépendra de la quantité que vous prenez, de la façon dont vous la prenez et de votre chimie physique individuelle.

Les voyages de Salvia diffèrent de ceux produits par toute autre drogue ou herbe.

La Salvia possède plusieurs avantages par rapport aux autres herbes visionnaires.

A Vous ne pouvez pas prendre de surdose fatale de feuille de Salvia

A La Salvia ne forme pas de dépendance

A La Salvia est légale

A Vous revenez rapidement à la normale

A La Salvia ne cause que rarement des effets secondaires.

Les bruits et les distractions vont interférer avec le voyage. En étant sous l'effet de la Salvia, regarder la télé est vraiment **abrutissant** ; être assis autour d'un feu de camp dans les bois la nuit est merveilleux.

Vous ne devriez pas être en public lorsque sous l'effet de la Salvia. Vous ne seriez vraiment pas capable de le supporter.

Particulièrement si vous n'y êtes pas habitué, ou si vous prenez une préparation puissante comme du concentré, vous devriez avoir un(e) gardien(ne) sobre présente(e) qui fera en sorte que vous ne fassiez rien de dangereux, comme renverser des chandelles allumées, ou passer par une fenêtre.

Si la Salvia est fumée, les effets se manifestent rapidement, en moins d'une minute. Si elle est mâchée, les premiers effets se manifestent après environ 15 minutes et les effets complets après environ 30 minutes. Habituellement, les voyages de Salvia durent de 15 minutes à une heure. Occasionnellement, les voyages peuvent durer jusqu'à 2 heures. Il est important de ne pas conduire ou utiliser de la machinerie pendant plusieurs heures après que le voyage parait être terminé.

La plupart des gens n'ont pas d'effets secondaires causés par la Salvia, quoique quelques personnes rapportent parfois un léger mal de tête. Si la Salvia est fumée, la fumée peut irriter vos poumons.

Les voyages de Salvia se produisent apparemment en niveaux. L'échelle appelée S-A-L-V-I-A a été construite pour évaluer les voyages. Chaque lettre du mot SALVIA symbolise un autre niveau de voyage. Quelques voyages ne se rendent qu'au niveau 1, d'autres atteignent des niveaux plus élevés.

Niveau 1 - **Gelage** - effets légers quelque peu similaires à de faibles doses de marijuana --- intérêt pour les textures visuelles, rire.

Niveau 2 - Modification des processus de pensée.

Niveau 3 - Effets psychédéliques ressemblant ceux du LSD tel que voir des patterns de couleurs en ayant les yeux fermés et des changements dans la forme de votre corps. Les sons peuvent être vu en tant que couleurs.

Niveau 4 - Voyage >chamanique' vers d'autres lieux et temps, ressemblant l'état de rêve. C'est le stade du >tapis volant'.

Niveau 5 - Perte d'identité, expériences mystiques. Fusion avec d'autres choses ou avec l'univers, perte de votre identité personnelle.

Niveau 6 - Anesthésie - Cela arrive seulement lorsque vous avez pris une dose qui est beaucoup trop grande. Perte de conscience pendant plusieurs minutes. Vous pourriez certainement tomber. Somnambulisme possible. Après coup, vous ne vous rappelez pas de ce que vous avez fait. Vous ne voulez pas atteindre ce niveau! Il n'y a rien de recommandable là dedans.

MÉTHODES D'UTILISATION

La Salvia n'est jamais prise par injection. Il y a plusieurs méthodes d'utilisation différentes. Plusieurs seront décrites ici.

MÉTHODES MAZATÈQUES TRADITIONNELLES

Les deux méthodes traditionnelles mazatèques sont plutôt inefficaces puisqu'elles requièrent beaucoup plus de feuilles que les autres méthodes. Mais elles sont très sécuritaires. Traditionnellement, les feuilles sont prises dans une pièce sombre comme faisant partie d'une cérémonie curative ou religieuse. Au moins une personne sobre est présente pour surveiller les gens qui ont pris de la Salvia.

A Un breuvage à base d'eau fabriqué à partir de feuilles fraîches broyées est l'une des manières mazatèques traditionnelles d'utiliser cette herbe. Cette méthode requiert beaucoup de feuilles et a un goût désagréable, c'est pourquoi elle n'est que rarement utilisée par les non-Mazatèques. Comme la **salvinorine** est très peu absorbée par l'estomac, une énorme quantité de feuilles est requise pour rendre le breuvage efficace. Mais ça marche et les voyages de breuvages durent plus longtemps que tous ceux des autres méthodes.

A Mâcher et avaler une grande quantité de feuilles fraîches est l'autre méthode mazatèque. Pour ce faire, les feuilles sont lentement grignotées pendant environ une demi-heure. Bien que les feuilles mâchées soit avalées, l'effet est surtout dû à la **salvinorine** qui est absorbée par les tissus de la bouche pendant le mâchage. Ceci est une méthode moins efficace de mâcher de la Salvia que la méthode de la chique (voir plus bas). La plupart des gens trouvent que mâcher des feuilles fraîches est désagréable, amer et même dégoûtant.

MÉTHODES MODERNES

A LA MÉTHODE DE LA CHIQUE : Une boule ou un cylindre de feuilles roulées est fabriqué. C'est appelé une chique. Elle a pour but d'être

mâchée. Les feuilles sont mâchées lentement, environ une mâchée tous les 10 secondes. Elles sont gardées sous la langue entre les mâchées. Pendant une demi heure, garder la chique qui est mâchée, et le jus qui s'en forme, dans votre bouche. Si vous le pouvez, gardez le tout dans votre bouche sans cracher ou avaler. Après que la demi heure de mâchage est terminée, cracher le tout. Ayez un bol dans lequel cracher et une serviette à portée de main. Le jus de Salvia tache les tapis, alors soyez certain(e) que le bol ne renversera pas.

Quoique les chiques peuvent être faites autant à partir de feuilles fraîches que séchées, celles faites à partir de feuilles séchées sont moins amères. Pour faire une chique à partir de feuilles séchées, pesez de 2 à 4 grammes de feuilles sèches. Les balances suffisamment précises pour ceci coûtent de 20 \$ à 50 \$ (américains). Si vous n'avez pas de balance, comptez de 8 à 16 grandes feuilles séchées complètes. Placez les feuilles dans un petit bol d'eau froide pendant 10 minutes. Une fois que les feuilles sont humides et qu'elles ont baigné pendant 10 minutes, retirez les feuilles de l'eau, extrayez-en l'excès d'eau et mettez-les en boule pour en faire une chique. Certaines personnes sautent l'étape du trempage lorsqu'ils sont pressés, mais mâcher des feuilles sèches et cassantes peut être désagréable. Si vous le souhaitez, vous pouvez sucrer la chique avec du sucre, du miel, **Stevia extract** ou du 'Equal'. Cela la rendra moins amère et plus plaisante à mâcher.

Si des feuilles fraîches sont utilisées au lieu de feuilles séchées, vous aurez besoin de 8 à 10 grandes feuilles fraîches.

L'effet de la chique de Salvia peut être grandement augmenté en taitant votre bouche de façon spéciale pour qu'elle absorbe d'avantage de **salvinorine**. Pour ce faire, vous aurez besoin d'une brosse à dent et d'un rince-bouche alcool/menthol tel que du Listerine à la menthe fraîche (ou tout autre marque qui contient de l'alcool et du menthol). Brossez la paroi de votre bouche, incluant les tissus sous votre langue et le dessus de votre langue. Cela a pour effet de retirer les couches de cellules

mortes normalement présentes. Ne brossez pas au point de causer des saignements. Après, rincez avec le rince-bouche pour au moins 30 secondes. Soyez sur(e) d'envoyer du rince-bouche partout dans votre bouche, incluant sous la langue. Crachez par la suite le rince-bouche et rincez une fois avec de l'eau.

Vous n'expérimenterez pas beaucoup de changement dans les 12 à 15 minutes de mâchage. Ne vous laissez pas tromper par cela. Les effets complets sont normalement ressentis après 30 minutes (le temps après lequel vous cracherez la chique). Ils demeurent à ce niveau pendant encore 20 minutes, puis commencent à diminuer. Le voyage total dure rarement plus longtemps qu'une heure et quart, mais cela varie.

A FUMER :

Les feuilles séchées peuvent être fumées à peu près comme la marijuana peut l'être. Elles devront être fumées chaudes, et inhalées profondément et rapidement pour faire effet, puisque la **salvinorine** requiert de hautes températures pour se vaporiser. Elles peuvent être fumées dans une pipe à courte tige, dans un bong ou dans une pipe '**steamroller**'. Remplissez un fourneau de taille moyenne avec des feuilles. Utilisez un briquet au butane à main qui s'éteindra quand vous ne le presserez plus, pas une allumette. Ayez un grand cendrier ou un bol qui ne renverse pas dans lequel mettre la pipe quand vous sentez que vous en avez assez. Rappelez-vous que si vous trébucher, vous pouvez oublier que vous tenez une pipe allumée. Vous pouvez l'échapper, causant un incendie. Même si plusieurs personnes passent outre ce conseil, il est préférable d'avoir un(e) gardien(ne) présent lorsque l'on fume. Les premiers effets seront remarqués moins d'une minute après avoir inhalé. Les effets complets arrivent après environ 3 minutes. La durée totale du voyage peut être moins d'une demi-heure ou aussi long qu'une heure.

A Fumer du concentré 5 x est un autre moyen de fumer de la Salvia. Le

>concentré 5 X' (5 X extract) consiste en des feuilles de Salvia auxquelles on a ajouté un concentré de **salvinorine**. Cela augmente la quantité de **salvinorine** contenue dans les feuilles. Le concentré 5 X est environ cinq fois plus puissant que des feuilles non traitées. Cela est très fort. Cela ne devrait pas être fumer sans la présence un(e) gardien(ne). La dose requise peut être très petite, moins de 100 mg. de 5 X peut être tout ce dont vous avez besoin.

A Il est possible de vaporiser les feuilles, ou concentré, dans un vaporisateur spécial qui chauffe le matériel sans le brûler. La vaporisation est extrêmement puissante et peut facilement engendrer de sérieux problèmes. Quiconque essaie la vaporisation DOIT absolument avoir un(e) gardien(ne) présent(e). Plusieurs vaporisateurs commerciaux faits pour le tabac ou le cannabis ne fonctionneront pas pour la Salvia. Des vaporisateurs spéciaux pour la Salvia peuvent facilement être construits, mais la vaporisation n'est pas pour les nouveaux ou les nouvelles à la Salvia.

A La Vaporisation de **salvinorine** pure est aussi possible. Cela est extrêmement dangereux puisqu'il est très facile de vaporiser trop de **salvinorine** et de faire une surdose. Pour être faite de manière sécuritaire, la vaporisation de **salvinorine** requière le pesage de la dose sur une balance chimique très précise capable de peser la **salvinorine** en microgrammes (Millionièmes de gramme). Ces balances analytiques coûtent bien au delà de 1000 \$ (américains). La vaporisation de la **salvinorine** n'est définitivement pas pour les débutants(es)!

QUELLE EST LA MEILLEURE MÉTHODE?

Il y a des pour et des contres pour chaque méthode. Quelques personnes rapportent que la chique leur procure un voyage plus fort, plus profond, plus visionnaire que la fumée. D'autre rapportent que le mâchage ne marche pas du tout pour eux(elle), mais que la fumée fait effet. Pour ceux et celles qui n'obtiennent que très peu d'effet de ces

méthodes, les deux méthodes peuvent être combinées. Mâchez d'abord une chique, puis, après l'avoir crachée, fumez.

Si vous fumez déjà la cigarette ou le cannabis, vous allez probablement préférer fumer.

Si vous êtes non-fumeur(se), vous allez probablement préférer la méthode de la chique ; fumer quoique ce soit, même de la Salvia, ne peut être bon pour vos poumons. Contrairement à la fumée, une chique n'endommage pas vos poumons.

Ça prend plus de feuilles séchées pour un voyage à la chique que pour un voyage à la fumée. Si vous n'avez que très peu de feuilles disponibles, fumer peut être une façon d'obtenir un voyage du peu que vous avez.

Les voyages de chiques arrivent lentement mais durent longtemps. Ils sont meilleurs pour explorer le monde de la Salvia. Ils sont meilleurs pour la méditation profonde.

Jusqu'à ce que vous sachiez à quel point vous êtes sensible à la Salvia, n'expérimentez pas avec des concentrés, des vaporisateurs ou de la **salvinorine**. Mâcher de la chique ou fumer des feuilles permettra à plusieurs personnes de se rendre jusqu'au niveau 5. Ces gens n'ont pas besoin d'expérimenter avec des manières plus fortes et plus dangereuses de prendre de la Salvia.

Il y a quelques personnes qui, même après plusieurs expériences, trouvent qu'ils(elles) demeurent des >têtes dures de la Salvia'. Ils(elles) n'expérimentent jamais plus qu'un léger effet de Salvia en fumant ou avec une chique. Certaines de ces >têtes dures' obtiendront des résultats satisfaisants s'il(elles) mâchent une chique et fument immédiatement après avoir craché la chique.

D'autres trouveront même cette méthode inefficace. Pour eux(elles), un concentré 5 X ou l'utilisation d'un vaporisateur peut valoir l'exploration. De telles >têtes dure de la Salvia' sont en minorité.

Voyez à quel point vous êtes sensible avant de risquer ces méthodes. Si vous avez une sensibilité normale à la Salvia, ces méthodes extrêmes devraient être évitées. Avec un peu de pratique, la chique, ou la fumée, ou une combinaison des deux ('boosting'), fonctionne très bien pour la plupart des gens. Plusieurs personnes croient que ça prend plusieurs rencontres avec la Salvia avant qu'une expérience >révolutionnaire' survienne. Alors ne vous étiquetez pas >tête dure de la Salvia' trop tôt.

GARDIEN(NES) ET SÉCURITÉ

QUAND VOUS AVEZ BESOIN D'UN(E) GARDIEN(NE)

Un(e) gardien(ne) est absolument essentiel si vous prenez des doses sous l'effet desquelles vous pourriez >capoter', devenir confus(e), vous blesser, tomber, mettre le feu à votre maison ou n'importe quoi qui ferait du mal à autrui. Ayez un(e) gardien(ne) présent(e) si vous utilisez la Salvia pour la première fois, si vous expérimentez avec une forme plus forte que vous avez utilisé auparavant ou si vous utilisez une méthode plus puissante pour la prendre.

Un(e) utilisateur(trice) expérimenté(e) de Salvia qui mâche une chique, peut souvent choisir de le faire seul(e) et peut être très sécuritaire en le faisant. Mais avoir un(e) agréable, sensible et sobre gardien(ne) est absolument essentiel si vous essayez la vaporisation, si vous fumez des feuilles rehaussées de concentré ou si vous utilisez de la **salvinorine** pure. Fumer des feuilles constitue habituellement un risque moyen. Servez-vous de votre jugement. Plusieurs personnes l'ont fait sans gardien(ne), mais un(e) gardien(ne) n'est pas une mauvaise idée.

QUE DEVRAIT FAIRE UN(E) GARDIEN(NE)

Le ou la gardien(ne) doit se rappeler que peu importe à quel point le(la) voyageur(se) agit, les voyages de Salvia sont de courte durée. N' amenez pas le(la) voyageur(se) à l' Urgence (hôpital). Gardez-le(la) en sécurité et attendez que ça passe. Si vous ne pouvez le(la) garder en sécurité, allez chercher de l' aide. Autrement, gardez l' affaire privée. Après environ une heure (habituellement beaucoup moins) le(la) voyageur(se) sera de retour à la normale. C' est très rassurant de se le rappeler quand les choses tournent mal. Ça aide d' avoir soi-même fait de la Salvia avant de surveiller une autre personne. Avoir de l' expérience avec d' autres psychédéliques peut ne pas être si utile. Le(la) gardien(ne) devrait savoir que la Salvia est différente de ceux-ci. Le fait de toucher la personne pour la >grunder' fonctionne pour quelques voyageurs(ses) sur des drogues comme le LSD, mais peut être très menaçant pour quelqu' un sur la Salvia. Si vous avez l' intention de toucher la personne, clarifiez-le avec elle AVANT que le voyage ne commence.

LES RÔLES DU GARDIEN OU DE LA GARDIENNE

Le ou la gardien(ne) à trois taches

La principale tâche est de garder le(la) voyageur(se) en sécurité et garder les gens autour de lui(elle) en sécurité. Cela passe avant tout. Les principaux dangers sont physiques, pas émotionnels. Votre tâche est 'gardien(ne)' et non psychologue. N' utilisez pas la force physique à moins que ça soit la seule solution. L' utilisation de la force physique peut résulter en blessures pour vous ou le(la) voyageur(se). Ça pourrait être interprété faussement comme un assaut.

Ne laissez jamais la Salvia être utilisée si des armes à feu, des couteaux ou autres objets dangereux sont présents. Prenez les clés du(de la) voyageur(se) pour les garder en sécurité avant que le voyage ne commence. Gardez le(la) voyageur(se) à l' abris des objets coupant, des flammes nues, des surfaces chaudes et des objets cassables. Prévenez

aussi qu'il(elle) tombe, qu'il(elle) se cogne la tête ou qu'il(elle) erre dans la rue. Mais laissez le(la) voyageur(se) se déplacer dans un endroit sécuritaire. Ne l'agrippez pas ou n'essayez pas de le(la) restreindre physiquement, à moins que cela soit absolument nécessaire. Redirigez. Parlez gentiment. Enlevez doucement les objets dangereux. Touchez la personne le moins possible (Le-la voyageur-se confus-se peut prendre votre touché pour un assaut ou un viol et peut réagir au danger qu'il-elle s'est imaginé). Vous pourriez avoir à faire à des intrusions d'étrangers non-prévues et d'autres situations sociales embarrassantes.

La deuxième tâche du(de la) gardien(ne) est de rassurer. Souvent, de simples explications répétées peuvent aider un(e) voyageur(se) effrayé(e). ex : "tu es en sécurité, je ne vais rien laisser te faire de mal." "Tu as juste un mauvais voyage, tu va te sentir mieux dans quelques minutes." "Ton nom est". Aje suis ton ami". Si parler n'est pas nécessaire, soyez silencieux. Le silence est souvent moins menaçant pour le(la) voyageur(se) confus(e) que d'essayer de déchiffrer ce que le(la) gardien(ne) est en train de dire.

La troisième tâche du gardien est d'aider le(la) voyageur(se) à se rappeler le voyage plus tard. Il y a plusieurs façons. Utilisez un calepin et écrivez les agissements et les paroles bizarres du(de la) voyageur(se). Plus tard, vous pouvez lui demander ce qui en retourne. Cela peut lui rafraîchir la mémoire à propos de ce qu'il(elle) a vécu. Une autre technique, si le(la) voyageur(se) n'est pas trop parti pour parler pendant le voyage, est de lui demander à répétition "que vis-tu présentement?" Un calepin ou une enregistreuse, peut être utilisé pour enregistrer les réponses. Puisque quelques voyageurs(ses) vont préférer que vous demeuriez silencieux(se) et que vous n'enregistriez pas, mettez les choses au clair avec le(la) voyageur(se) avant le voyage.

LIGNES DE CONDUITE INTELLIGENTES

A NE JAMAIS UTILISER LA SALVIA QUAND DES ARMES À FEU

SONT PRÉSENTES. Ne jamais utiliser la Salvia lorsque des couteaux sont à la portée.

A NE JAMAIS CONDUIRE EN PRENANT DE LA SALVIA.

A Choisissez le moment et le lieu de votre voyage avec soin. Intimité et sécurité sont essentielles. Faites attention aux hauteurs et aux flammes nues comme les chandelles. Ne prenez pas de Salvia lorsque vous pouvez être interrompu par des appels téléphoniques, par des visites, par des animaux de compagnie, par des enfants, etc. Éteignez votre téléphone et programmez votre répondeur pour qu'il enregistre silencieusement les appels. Vous pouvez retourner les appels dans quelques heures, lorsque vous serez sobre.

A Réfléchissez bien à la quantité que vous allez prendre et à la manière dont vous la prendrez.

A Après que tout le matériel de fumage soit rangé, couchez-vous au lit, sur un sofa, ou sur un tapis. Vous êtes beaucoup plus en sécurité couché(e) que vous ne le seriez à trébucher un peu partout. Demeurez ainsi pour le reste du voyage. Vous pouvez mieux voyager avec vos yeux fermés.

A Ayez un(e) gardien(ne) (c'est tout spécialement important si vous prenez de la Salvia pour la première fois, si vous prenez une forte dose, si vous fumez du concentré ou si vous utilisez un mode d'ingestion très puissant comme la vaporisation).

A Proposez-vous pour surveiller les autres.

A Si vous avez des problèmes de santé mentale, ne prenez pas de Salvia sans en avoir d'abord discuté avec votre praticien(ne) ou médecin.

A Pratiquez et encouragez un usage responsable. Ne donnez pas de Salvia à des personnes mineures ou à des gens violents ou instables. Ne la partagez pas avec des étrangers. Sachez à qui vous la donnez et sachez pourquoi ils(elles) veulent l'utiliser. Pourquoi courir après les problèmes?

A Ne jamais prendre de Salvia au travail ou en public. Gardez ça privé. Ce n'est pas pour les concerts. Ce n'est pas pour les grands >partys'.

A Ne mélangez pas avec l'alcool. Évitez de mélanger la Salvia avec les autres drogues. Même si les utilisateurs expérimentés de Salvia ont expérimenté avec les combinaisons, elles ne sont pas pour les débutants(es) de la Salvia et elles sont certainement plus risquées que la Salvia par elle-même.

A Faites extrêmement attention aux flammes - chandelles, biquets, feu, etc. en utilisant la Salvia.

A Faites très attention en utilisant du concentré vaporisé, des feuilles vaporisées, ou en fumant des feuilles avec concentré ajouté. Ces dernières méthodes nécessitent la présence d'un(e) gardien(ne). Mâcher une chique ou fumer des feuilles a beaucoup moins de chances de produire des agissements hors de contrôle que ces méthodes.

A Ne jamais utiliser de la **salvinorine** pure à moins que vous soyez équipé avec les balances ultra précises nécessaires pour peser les doses mesurées en microgrammes et savoir exactement combien vous pouvez en prendre de manière sécuritaire. Même si vous rejoignez ces conditions, vous devez toujours avoir un(e) gardien(ne) présent.

LA PLANTE ET SES SOINS

Si vous allez faire pousser votre propre Salvia, vous devriez lire ceci. Si vous préférez acheter des feuilles séchées, vous pouvez laisser tomber

cette section. La *Salvia divinorum* est une vivace semi-tropicale. Cela veut dire qu'elle peut repousser année après année, mais seulement si elle n'est pas exposée à des températures en deçà du point de congélation. C'est une grande plante avec de grandes feuilles et une épaisse tige creuse qui la distingue. Elle peut pousser plusieurs mètres de haut si les conditions sont favorables. Quand elle atteint une taille suffisante, les branches plient ou cassent et peuvent s'enraciner si elles viennent en contact avec un sol humide. Même si la *Salvia divinorum* peut fleurir dans des conditions d'éclairage naturel, elle ne produit pratiquement jamais de graines qui germeront. Alors la plante est propagée par des boutures. Les feuilles sont ovales, légèrement dentelées et peuvent être passablement grandes (jusqu'à 9 pouces de longueur). Elles sont souvent de couleur verte émeraude mais peuvent être jaunes vertes ou même jaunes. Elles sont souvent couvertes d'une fine couche de poils très courts, donnant aux feuilles une apparence de satin velouté sous certaines lumières. Les plantes aiment l'eau, mais poussent mieux dans une ombrage partiel et dans un sol bien arrosé mais bien drainé. Les racines ne doivent pas demeurer trempées sinon la pourriture les gagnera et la plante en mourra.

La *Salvia divinorum* peut pousser à l'intérieur dans n'importe quel climat. Elle fait une très belle plante de maison.

Vous pouvez faire pousser de la *Salvia divinorum* à l'extérieur à l'année longue si vous habitez un climat semi-tropical, avec un sol bien drainé, mais bien arrosé et quelque peu acide, avec un haut contenu en humus. Si vous habitez dans un climat plus froid ou plus sec, vous pouvez faire pousser de la *Salvia* à l'extérieur, quand la température le permet. Mais vous devrez peut-être le faire avec soins, en vous assurant qu'elle est protégée de la gelée, que vous l'arrosez fréquemment et que vous l'humidifiez lorsque le taux d'humidité est bas. La *Salvia* ne survivra pas à la gelée ou la sécheresse. On peut la faire pousser à l'extérieur, dans des pots qui peuvent être transporter à l'intérieur par temps froid (sous 40 degrés Fahrenheit). De cette façon, on peut la faire pousser à

l'extérieur l'été et à l'intérieur l'hiver.

La Salvia vous signalera lorsqu'elle sera trop sèche - ses feuilles tomberont. Soyez sûr(e) de l'arroser au premier signe de langueur, ne laissez pas le plant devenir mou. Le sol devrait être bien drainé mais gardé humide.

Si vous plantez de la Salvia en pots, SOYEZ SÛR(E) QUE LE POT SOIT GRAND, PLUS C'EST GRAND MIEUX C'EST. Doubler le diamètre du pot peut améliorer la production de feuilles par plus de 4 fois. Même si votre espace disponible limitera la grandeur possible du pot, utilisez le plus gros pot praticable. Il doit posséder des trous de drainage. Placer du gravier (ou des morceaux de styrofoam) dans le fond du pot aidera au drainage et de ce fait décourager le pourrissement de la racine. De la terre à pot commerciale fera l'affaire. Ajouter de la vermiculite ou de la perlite à la terre à pot aide mais n'est pas essentiel.

La Salvia aura besoin de fertilisant. Il n'y a pas de fertilisant vraiment meilleur que les autres. Des résultats satisfaisants peuvent être obtenus avec différents produits. En voici quelques-uns:

A Scotts All-Purpose Plant Food (18-13-13) légèrement saupoudré sur le sol environ une fois par six semaines.

A MirAcid ajouté à de l'eau une fois par semaine (1/4 c.à.t. par gallon)

A Peters Professional Soluble Plant Food (15-30-15) 1/4 c.à.t. par gallon d'eau, une fois par semaine

Moins recommandés:

A émulsion de poisson (convenable à l'extérieur seulement, puisque ça dégage une odeur très mauvaise)

A Bone meal (les animaux peuvent creuser votre Salvia si vous en utilisez!)

Si vous faites pousser à l'intérieur, placez vos plantes à l'extérieur quand c'est assez chaud et laissez la pluie leur tomber dessus. Cela préviendra les accumulations de sel dans le sol qui pourraient tuer vos plantes.

La Salvia divinorum peut bien faire sous une variété de différentes conditions d'éclairage. Elle préfère quelques heures de lumière du soleil partielle par jour. Elle peut bien s'en tirer en poussant à l'intérieur près d'une fenêtre. Elle peut supporter plus de soleil si elle est gardée bien arrosée et ses feuilles humidifiées fréquemment. Elle peut aussi supporter un ombrage modéré. Quand vous changez les conditions d'éclairage ou d'humidité auxquelles vos plantes sont exposées, faites-le graduellement. Lorsqu'on lui donne le temps, la Salvia s'adapte bien, mais elle peut prendre des semaines pour s'habituer à un nouvel environnement.

Plusieurs insectes nuisibles peuvent attaquer la Salvia. La **Whitefly** est un gros problème pour les plantes qui poussent en serre. Aphidiens, limaces, chenilles, **thrips**, araignées et autres petits insectes peuvent aussi endommager vos plantes. La moisissure de racines et la pourriture d'évaporation peuvent causer problème. **Fungal spots** peuvent apparaître sur les feuilles. Nous ne savons pas quels virus peuvent s'attaquer à la Salvia divinorum, il y en a sûrement puisque plusieurs s'attaquent à d'autres sauges.

Les aphidiens et autres petits insectes peuvent être éliminés avec un linge de coton trempé dans l'alcool à friction.

Les dommages causés par les limaces peuvent être diminués en faisant pousser la Salvia dans des pots placés sur une structure surélevée ou sur une palette. Quelques-unes peuvent quand même se rendre et

attaquer vos plants. Gardez un oeil sur ces pestes gluantes. Une seule limace peut dévorer une bonne quantité de Salvia! De la bière peut être utilisée pour attirer et noyer les limaces. Placez un contenant de bière légèrement enfoui dans le sol; le rebord du contenant doit arriver au niveau du sol, pour que les limaces puissent y entrer, se saouler et se noyer.

Les petites araignées peuvent être contrôlées en dissolvant du savon **Castile** dans de l'eau et en vaporisant les feuilles, incluant leur dessous. Répétez à intervalle de deux semaines pour trois applications. Attention: il a été rapporté que le savon endommageait les feuilles alors n'en utilisez pas trop.

Utiliser un boyau de jardin à l'extérieur, ou un vaporisateur à l'intérieur, pour arroser le dessus et le dessous des feuilles peut se révéler plus efficace pour contrôler les petites araignées. Votre boyau de jardin est votre meilleur ami pour ce qui est de combattre la plupart des insectes nuisibles d'extérieur. Aspergez les feuilles avec assez de force pour déloger les insectes nuisibles, sans toutefois endommager les feuilles. N'oubliez pas d'asperger aussi le dessous des feuilles.

La Salvia divinorum se propage par bouture et non par graines. Les boutures peuvent être enracinées soit dans l'eau ou directement dans le sol. Voici comment:

ENRACINER DANS L'EAU: coupez une branche (4 à 8 pouces de long) portant quelques feuilles. Placez la immédiatement dans environ un pouce et demi d'eau dans un petit verre d'eau. Seulement une bouture doit être placée dans chaque verre, de sorte que si la pourriture se développe dans une bouture cela n'affectera pas les autres.

L'idéal est que la branche soit coupée tout juste au dessous d'un noeud, puisque les noeuds sont des endroits à partir desquels de nouvelles racines sont portées à se développer. Quoiqu'il n'est pas

nécessaire de couper à cet endroit, le faire à l'avantage qu'il n'y aura pas de tige dans l'eau sous le noeud. C'est important puisqu'un bout de tige coupée a d'avantage de chances d'être victime de pourriture qu'un noeud.

Soyez sur(e) que la bouture est taillée avec des cisailles propres, ou un couteau, pour que la tige coupée ne soit pas attaquée par des germes et les champignons microscopiques qui pourraient causer de la pourriture. Coupez toutes les grandes feuilles, mais laissez-en quelques petites. Placez un bocal transparent (ou un sac de plastique transparent) à l'envers par dessus la plante, il jouera le rôle d'une tente d'humidité. Placez la où elle profitera des rayons du soleil. Changez l'eau quotidiennement. Cela peut être une bonne idée d'utiliser de l'eau bouillie refroidie. Si votre eau contient du chlore, la bouillir éliminera le chlore. L'eau sans chlore peut être contaminée par des germes mauvais pour la plante, mais l'ébullition devrait les tuer. L'enracinement dans l'eau fonctionner les 3/4 du temps (le reste du temps, la pourriture attaque et tue la bouture).

En deux semaines, des racines commencerons à se développer. Quand elles atteignent 1/2 à 1 pouce de hauteur, transplantez-la dans de la terre à pot dans un pot bien drainé. Continuez de couvrir avec un bocal ou sac transparent en guise de serre jusqu'à ce que la plante paraisse vigoureuse. Sevez par la suite graduellement la plante de sa dépendance à la tente d'humidité.

ENRACINER DANS LA TERRE: la Salvia peut être enracinée directement dans le sol. Matériel requis:

A de la terre à pot.

A deux gobelets en plastique jetables.

A de la poudre Rootone (c'est un mélange d'hormones pour enraciner

qui contient aussi un fongicide) disponible pépinière.

A un mince sac transparent de polyéthylène de 1 gallon, servant à conserver la nourriture.

A une bande élastique.

A de l'eau.

Procédé:

percez quelques petits trous de drainage dans l'un des gobelets. Remplissez-le au 2/3 avec de la terre à pot. En utilisant un crayon ou un doigt, faites un trou d'environ 2 pouces de profond dans la terre. La terre est maintenant prête pour votre bouture. Vous devez maintenant préparer la bouture. Avec des cisailles propres, coupez un bout de tige à partir d'une plante en santé. Laissez quelques feuilles (des petites) dans le haut. Récoltez les plus grandes feuilles de la tige. Immédiatement après avoir coupé la tige, placez-la dans de l'eau propre. Coupez-la tout juste sous un noeud, puisque les racines se formeront à partir du noeud. Gardez la surface coupée humide. Placez la surface coupée, et 1 pouce de tige au dessus de la coupe, dans la poudre à enracinement. Secouez-en l'excès. La poudre à enracinement est quelque peu toxique, alors lavez-vous les mains après l'avoir manipulée. Placez la bouture enduite de poudre dans le trou, dans la terre. Poussez doucement la terre autour de la bouture, en la tenant en place pendant que vous remplissez la trou. Arrosez la bouture plantée jusqu'à ce qu'il y ait un peu d'eau qui sorte des trous de drainage. Placez le gobelet contenant la plante dans le deuxième gobelet (qui est là pour récupérer l'excès d'eau). Vous pouvez placer un petit morceau de bois ou de plastique dans le fond du gobelet extérieur pour espacer les gobelet l'un de l'autre. Cela donne de l'espace pour que l'excès d'eau puisse se drainer. Placez un sac de plastique transparent d'un gallon par dessus la bouture enracinée, utilisez la bande élastique pour le tenir en place. La bande élastique doit

être à l'extérieur du sac et le sac à l'extérieur des deux gobelets. La bande élastique maintient le sac contre les gobelets. Puisque le sac de plastique sert à conserver l'humidité, il n'est pas nécessaire d'arroser fréquemment. Après quelques semaines, vous pouvez transplanter le plant maintenant enraciné dans un plus grand pot.

TRANSFORMATION DES PRODUITS DE LA PLANTE

Les feuilles de *Salvia divinorum* séchées peuvent être conservées dans des bocaux scellés à l'abri de la lumière. Ainsi conservées, les feuilles peuvent probablement conserver leur efficacité pendant plusieurs années, peut-être indéfiniment (personne ne sait vraiment pendant combien de temps). Si vous faites pousser votre propre *Salvia*, vous voudrez probablement sécher des feuilles pour un usage futur. Il y a plusieurs façons de le faire.

Méthode 1.) La bonté de la nature

Attendez que les feuilles meurent ou tombent. Ramassez-les. Placez-les sur une plaque dans une pièce à faible humidité. Tournez-les souvent. Attendez qu'elles soient sèches, puis rangez-les. On ne sait pas si naturellement, les feuilles tombées sont plus fortes ou moins fortes que les feuilles cueillies.

Avantage: vous ne priverez pas vos plantes de feuilles qu'elles ont besoin.

Inconvénient: vous devrez attendre que la plante soit prête à faire un don à votre cause. Les feuilles peuvent ne pas être en parfaite condition.

Méthode 2) Tabac de *Salvia*

Prenez de grandes feuilles fraîchement cueillies et placez-les unes par dessus les autres (comme on empile des feuilles de papier). Coupez

ensuite au travers la pile pour faire des bandes de 1/2 cm. (1/4 pouce). Placez-les en tas sur un plateau. Tournez-les deux fois par jour jusqu' à ce qu' elles soient sèches mais non croustillantes.

Avantage: le >tabac' résultant produit apparemment une fumée plus douce que les feuilles complètement sèches.

Inconvénient: il est possible que ce séchage lent et partiel produise des feuilles plus faibles qui ne se conserveront pas aussi longtemps que des feuilles complètement sèches (croustillantes).

Méthode 3) Déshydrateur de nourriture

Séchez dans un déshydrateur de nourriture. Ils sont disponibles où des petits appareils de cuisine sont vendus. Le séchage est très rapide et complet. Séchez jusqu' à ce que la feuille en entier, incluant les tiges de feuilles, soit croustillantes. Touchez les feuilles avec vos doigts pour voir si elles sont complètement sèches. Si elles le sont, les tiges de feuilles devraient se casser si une pression leur est appliquée.

Avantages: rapidité, séchage complet et commodité.

Inconvénient: prix d' achat du déshydrateur.

Méthode 4).Salvia séchée au four

Placez sur un plat allant au four. Cuire dans un four à une température pas plus élevée que 150 F.

Avantage: rapidité, séchage complet et commodité.

Inconvénient: quelque peu moins pratique que d' utiliser un déshydrateur de nourriture. Il peut être difficile de garder le four à la température optimale.

Méthode 5). Séchage au **chlorure de calcium**

Le **chlorure de calcium** est disponible, en tant que recharge de 'Damp-Rid' , chez la plupart des quincailleries. Placez une quantité suffisante de **chlorure de calcium** au fond d'un contenant de polyéthylène. Placez un morceau de papier d'aluminium par dessus le CaCl_2 et placez les feuilles à sécher sur la feuille d'aluminium. Le fait de replier les bord de la feuille d'aluminium devrait empêcher les feuilles de toucher le CaCl_2 . Scellez ensuite le contenant. Les feuilles devraient être sèches dans environ 2 jours.

Avantage: séchage très complet.

Inconvénient: moins pratique que les autres méthodes. Lent.

Peu importe comment vous séchez les feuilles, placez-les dans un bocal scellé, à l'abris de la lumière. Un pot à cannage propre fait très bien l'affaire (pot Mason). Le fait de ranger le pot dans un tiroir de cuisine ou dans un **cabinet de médicaments** le gardera à l'abris de la lumière. Rangées de cette façon, les feuilles garderont leur efficacité pendant plusieurs mois, voire plusieurs années.

EN CONCLUSION

Ayant lu jusqu'ici, vous en savez maintenant assez pour commencer sur le chemin vert de la Salvia. Que ce chemin vous apparaisse toujours plein de cœur. Que cette remarquable plante-enseignante vous guide vers un plus haut niveau de connaissance de soit, d'harmonie, de merveille et de joie.

LA GUIA DE USUARIOS DE SALVIA DIVINORUM

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El autor de esta guía, "Sage Student", desea permanecer anónimo.
(Montaje en HTML por [Daniel Siebert](#) / Traducción al español por [Jeí](#))
Información adicional sobre Salvia divinorum puede ser encontrada en:
<http://sagewisdom.org/>

¿POR QUE HA RECIBIDO USTED ESTA GUIA?

Quizá un amigo le dió un corte de Salvia divinorum, o talvéz usted compró hojas secas, o una planta viva. Salvia divinorum no es un placebo. Es como una alfombra voladora mágica, que puede llevarlo a realidades que usted no puede siquiera concebir. Si usted de pronto encuentra una alfombra voladora, usted podría desear que un libro de instrucciones viniera con ella. Suponga que viniese. Debido a que usted es aventurero pero no estúpido, usted leería cuidadosamente las instrucciones antes de tratar de volar. Ahora usted está leyendo una guía de usuarios para la alfombra voladora llamada Salvia.

NO use Salvia hasta que usted haya leído completamente esta guía. Si la Salvia es usada estúpidamente, puede volverse contra usted. Al aprender lo que está aquí escrito, usted puede evitar peligros.

Esta guía fué escrita tanto para darle a usted información que necesita para usar Salvia en forma segura, así como para enseñarle cómo cultivar sus propias plantas de Salvia.

ES GRATIS

Nadie debe de haberle cobrado por esta guía. Debe ser dada en forma gratuita siempre que plantas u hojas sean entregadas o vendidas. Nadie debe obtener ganancia económica de ella. Fué escrita como un servicio

público. El autor no recibirá ningún dividendo.

COPIE LIBREMENTE Y COMPLETAMENTE

Esta guía debe ser dada gratuitamente a cualquiera que esté interesado en la Salvia.

POR FAVOR COPIE ESTA GUIA PALABRA POR PALABRA. Entréguela libremente a cualquiera con quien usted comparta hojas o plantas. Si usted la copia, cópiela COMPLETA. No cobre. Entréguela tal como está. Cuanto más sea aprendido acerca de la Salvia, esta guía puede ser cambiada. Por tal razón, es importante que la FECHA DE VERSION (arriba) sea incluida en la copia que usted entregue. De esta forma, la persona que la reciba podrá saber si su copia está actualizada.

SIMPLEMENTE UN INICIO

Esta guía es solamente un inicio. Luego de leerla usted puede desear aprender más. Una forma excelente es revisar las páginas en inglés de Daniel Siebert en el World Wide Web. El URL es: <http://sagewisdom.org>. Hay allí abundancia de información, incluyendo:

- Preguntas Frecuentemente Hechas (FAQ) acerca de la Salvia
- Una lista de suplidores de Salvia
- Imágenes de plantas de Salvia y la estructura química de la salvinorina
- Reportes de viajes
- Referencias de publicaciones científicas
- Conecciones a muchos otros sitios de Salvia
- Información para unirse a la muy activa lista de correo de Salvia

NOCIONES BASICAS DE SALVIA DIVINORUM

Salvia divinorum es una planta que es una de las muchas especies de salvia. Las salvias verdaderas son miembros de la familia de la menta. Por tanto, Salvia divinorum está en la familia de la menta. Es una hermosa planta de hogar (y puede ser cultivada simplemente por esa razón), pero la mayor parte de quienes cultivan esta planta están interesados en sus fascinantes efectos psicoactivos.

El nombre *Salvia divinorum* significa 'Salvia de los Adivinadores'. Bajo las condiciones correctas, tomada de la forma correcta, la *Salvia* produce un estado único de 'trance divino'. Por cientos de años ha sido utilizada en ceremonias religiosas y curativas por los Indígenas Mazatecas, quienes viven en el estado de Oaxaca, en México.

Al día de hoy (14/5/99) ni la *Salvia*, ni la sustancia Salvinorin-A que contiene están regulada en los Estados Unidos. Es legal cultivar, comprar y vender plantas de *Salvia* o sus hojas.

Los efectos de la *Salvia* son muy diferentes de aquellos del alcohol; pero como el alcohol, limita su habilidad para conducir y reduce su coordinación. Conducir bajo la influencia de *Salvia* es muy estúpido.

Salvia divinorum es tanto similar como diferente de otras sustancias que afectan la mente. En muchas formas *Salvia divinorum* está en una clase por sí misma. Ninguna otra hierba, ninguna otra droga, es realmente muy similar a la *Salvia*. La *Salvia* no es 'mariguana legal'. No es 'ácido legal'. *Salvia* es *Salvia*. Es una 'hierba visionaria' única.

La *Salvia* contiene una sustancia química llamada salvinorina. La Salvinorina causa efectos alteradores de la mente. No está químicamente relacionado con LSD, DMT, Ecstasy, THC o cualquier otra droga. No es un alcaloide.

Aunque no forma hábito, la salvinorina pura es extremadamente fuerte. Dosis de solamente algunos cientos de microgramos (millonésimas de un gramo) tendrán un efecto y dosis superiores a 1 miligramo (1/1000 de un gramo) son demasiado para ser manejadas por la mayoría de personas. Afortunadamente la hoja de *Salvia* es cientos de veces más débil que la salvinorina pura. Esto hace mucho más fácil usar con seguridad hojas de *Salvia* de lo que sería usar salvinorina pura.

El uso de hojas de *Salvia* es físicamente bastante seguro. Nadie ha

muerto nunca de una sobredosis de Salvia. La Salvia no es un estimulante, un sedante, un narcótico, ni un tranquilizante. Como los psicodélicos puede inducir visiones. Pero difiere de los llamados 'psicodélicos clásicos' (LSD, psilocibina y mescalina) en muchas formas. Nadie sabe cómo la salvinorina actúa en el cerebro. Sabemos que trabaja en forma diferente a cualquier otra sustancia conocida.

LA SALVIA NO ES UNA DROGA PARA FIESTAS

Esto es importante de entender. La mayoría de las personas no encuentran que la Salvia sea divertida en la forma que el alcohol o la mariguana lo pueden ser. Si usted trata de irse de fiesta con la Salvia, probablemente no pasará un buen rato.

La Salvia es una hierba que modifica la conciencia, que puede ser usada en un viaje visionario o en un ritual curativo. En el lugar correcto, la Salvia hace posible tener visiones. Es una hierba con una tradición de uso sagrado; una hierba para meditación profunda. Es mejor al ser tomada en una habitación silenciosa, con poca luz, ya sea solo (si un cuidador no es necesario – ver abajo), o con uno o dos buenos amigos presentes. Es tomada en silencio o (algunas veces) con el sonido de alguna suave música placentera.

VIAJES CON SALVIA - ¿QUE ESPERAR?

Los viajes con Salvia pueden ser fuertes o débiles. Esto se mantiene tanto para hojas masticadas como para hojas fumadas. La fuerza del viaje dependerá de cuánto usted tome, la forma en que la tome y la química individual de su cuerpo.

Los viajes con Salvia difieren de aquellos producidos por cualquier otra droga o hierba.

La Salvia tiene muchas ventajas sobre otras hierbas visionarias

- Usted no puede tomar una sobredosis fatal de hojas de Salvia
- La Salvia no forma hábito
- La Salvia es legal
- Usted rápidamente regresa al estado normal
- La Salvia rara vez causa resaca

Ruido y distracción interferirán con el viaje. Cuando se está con Salvia ver televisión no es nada placentero; estar sentado alrededor de una fogata en el bosque de noche, es maravilloso.

Usted no debe estar en público cuando use Salvia. Realmente no estará en capacidad de manejarlo.

Especialmente si usted no está acostumbrado a la Salvia o está tomando alguna potente preparación, como un extracto, debe tener un cuidador sobrio con usted, para asegurarse de que no hará nada peligroso, como botar candelas encendidas o salir por una ventana.

Si la Salvia es fumada, los efectos llegan muy rápido, en menos de un minuto. Si es masticada, los primeros efectos llegan en cerca de 15 minutos y los efectos totales alrededor de los 30 minutos. Usualmente un viaje con Salvia dura de 15 minutos a una hora. Ocasionalmente los viajes pueden durar hasta 2 horas. Es importante no conducir o usar maquinaria por bastantes horas luego de que el viaje parezca haber terminado.

La mayoría de las personas no sufren resaca por la Salvia, aunque algunas personas reportan ocasionalmente un suave dolor de cabeza. Si la Salvia es fumada, el humo puede irritar sus pulmones.

Los viajes con Salvia parecen ocurrir en niveles. La llamada escala S-A-L-V-I-A ha sido hecha para calificar los viajes. Cada letra de la palabra SALVIA representa un nivel de viaje. Algunos viajes solamente alcanzan el nivel 1, otros alcanzan niveles más altos.

Nivel 1 – **Sonrisas** – efectos suaves, en algo similar a una dosis baja de marihuana ---
interés en texturas visuales, risa

Nivel 2 – **Alteración** de los procesos de pensamiento

Nivel 3 – **LSD** – efectos psicodélicos similares, como visiones de patrones coloreados con sus ojos cerrados y cambios en la forma de su cuerpo. Los sonidos pueden ser vistos como colores

Nivel 4 – **Viajero** – viajes 'shamanísticos' de ensueño a otros lugares y tiempos. Esta es la etapa de la 'alfombra voladora'

Nivel 5 – **Identidad perdida** – experiencias místicas. Fusión con otras cosas o con el universo. Pérdida de su identidad personal.

Nivel 6 - **Anestesia** – Esto solo ocurre cuando usted ha tomado una dosis que es demasiado alta. La conciencia es perdida por bastantes minutos. Usted puede o no caerse. Puede ocurrir sonambulismo. Posteriormente usted no recuerda lo que hizo. ¡Usted no quiere alcanzar este nivel! No tiene nada que lo recomiende.

METODOS DE USO

La Salvia nunca es tomada por inyección. Hay muchos métodos diferentes de uso. Bastantes serán discutidos aquí.

METODOS TRADICIONALES MAZATECAS

Los dos métodos tradicionales Mazatecas son algo ineficientes, por el hecho de que requieren muchas más hojas que los otros métodos, pero son muy seguros. Tradicionalmente las hojas son tomadas en una habitación semi-obscura, como parte de una ceremonia curativa o religiosa. Al menos una persona sobria está presente, para cuidar a las personas que han tomado Salvia.

- Una bebida a base de agua, hecha de hojas frescas molidas, es una de las formas tradicionales Mazatecas de usar esta hierba. Requiere de gran cantidad de hojas frescas y su sabor no es placentero, por lo que este método es rara vez usado por los no-Mazatecas. La salvinorina es pobremente absorbida por el estómago, por lo que requiere enormes cantidades de hojas el hacer que la bebida sea efectiva. Pero realmente funciona y los viajes duran más tiempo que con cualquier otro método.

- Masticar y tragar un número grande de hojas frescas es el otro método Mazateca. Cuando ésto es hecho, las hojas son molidas en la boca lentamente por cerca de 1/2 hora. Aunque las hojas masticadas son tragadas, el mayor efecto es obtenido de la salvinorina que es absorbida a través del tejido fino de la boca durante el masticado. Esta es una forma menos eficiente de masticar Salvia que la del método del cilindro (ver abajo). La mayoría de las personas encuentran el masticar hojas frescas desagradablemente amargo y hasta nauseabundo.

METODOS MODERNOS

· METODO DEL CILINDRO:

Una bola de hojas enrolladas es hecha. Esto es llamado un cilindro. Es para ser masticado. Las hojas son masticadas lentamente, cerca de una masticación cada 10 segundos. El cilindro es mantenido bajo la lengua entre cada masticación. Conserve el cilindro que está siendo masticado y el jugo que se forma por media hora en su boca. Si es posible, manténgalo sin escupir ni tragar. Entonces, luego de que la media hora de masticado pasa, escúpalo todo. Tenga a mano un recipiente donde escupir así como una toalla. La saliva con Salvia mancha las alfombras, por lo que debe asegurarse de que el recipiente no se derrame.

Aunque los cilindros pueden ser hechos de hojas secas o frescas,

aquellos hechos con hojas secas son menos amargos. Para hacer un cilindro de hojas secas pese de 2 a 4 gramos de ellas. Balanzas con la precisión adecuada cuestan de \$20 a \$50. Si usted no tiene balanza cuente de 8 a 16 hojas grandes enteras.

Ponga las hojas en un recipiente pequeño con agua fría por 10 minutos. Una vez que las hojas están húmedas sáquelas del agua, escurra el exceso de agua de ellas y enrróllelas en un cilindro. Algunas personas no realizan este proceso de remojo cuando están apresurados, pero masticar hojas secas puede ser poco placentero. Si lo desea, puede endulzar el cilindro con azúcar, miel, extracto de Stevia o 'Equal'. Esto lo hará menos amargo y más placentero.

Si son usadas hojas frescas en lugar de secas, usted necesitará de 8 a 16 hojas grandes.

El efecto de los cilindros de Salvia pueden ser significativamente incrementados con el tratamiento previo de su boca en una forma especial para incrementar su habilidad de absorber salvinorina. Para esto usted necesitará un cepillo dental y un enjuague bucal que contenga menthol y alcohol, tal como Listerine Cool Mint, (o cualquier otra marca que contenga alcohol y menthol). Cepille todo el interior de su boca, incluyendo el tejido fino bajo su lengua y la parte superior de la superficie de ésta. Esto remueve capas de células muertas normalmente presentes. No cepille tan duro como para causar sangrado. Luego enjuáguese con el enjuague bucal por al menos 30 segundos. Asegúrese de aplicar enjuague bucal en toda su boca, incluyendo bajo su lengua. Después de esto escupa el enjuague bucal y enjuáguese una sola vez con agua.

Usted experimentará muy poco efecto durante los primeros 12 a 15 minutos de masticación. No se desaliente por esto. Los efectos totales son usualmente sentidos a los 30 minutos (al tiempo que usted escupe el

cilindro), los que permanecen en tal nivel por cerca de 20 minutos más, para luego empezar a disminuir. El viaje completo rara vez dura mucho más de una hora y cuarto, pero ésto varía.

• **FUMADO:**

- Las hojas secas pueden ser fumadas en forma similar a como la mariguana es fumada. Necesita un calor alto y ser inhalado profunda y rápidamente para optimizar el efecto, pues la salvinorina requiere de altas temperaturas para ser vaporizado. Las hojas pueden ser fumadas en una pipa de tabaco corta, en una pipa de agua o en una pipa de vapor. Llene una pipa de regular tamaño con hojas. Use un encendedor manual de butano que se apague una vez que usted deje de presionarlo, no un cerillo. Tenga un cenicero grande o un recipiente resistente al calor donde poner la pipa cuando sienta que ha tenido suficiente. Recuerde que, cuando viaja, usted puede olvidar que está sosteniendo un pipa encendida. Podría dejarla caer, causando un fuego.

Aunque muchas personas ignoran el consejo, es mejor tener a un cuidador presente cuando se fuma. Los primeros efectos se notarán dentro del minuto siguiente a la inhalación. Los efectos totales ocurren cerca de los 3 minutos. La duración total del viaje puede ser menor a 1/2 hora o tan larga como una hora.

- Fumar extracto 5x es otro método de fumar Salvia. El 'extracto 5x' consiste de hojas de Salvia a las que les ha sido agregado un extracto que contiene salvinorina. Esto incrementa el contenido de salvinorina de las hojas. El extracto 5x es cerca de cinco veces más fuerte que las hojas no tratadas. Esto es bastante fuerte. No debe ser fumado sin un cuidador presente. La dosis requerida puede ser muy pequeña, menos de 100 mg. de extracto 5x puede ser todo lo que usted necesitará.

- Es posible vaporizar hojas o extracto en un vaporizador especial que calienta el material sin quemarlo. La vaporización es extermadamente

potente y puede fácilmente conducir a serios problemas. Cualquiera utilizando la vaporización DEBE absolutamente tener a un cuidador presente. Muchos vaporizadores comerciales hechos para tabaco o mariguana no funcionarán con Salvia. Vaporizadores especiales para Salvia pueden ser contruidos con facilidad, pero la vaporización no es para aquellos novatos en Salvia.

- La vaporización de salvinorina pura también es posible. Esto es extremadamente peligroso, al ser muy fácil vaporizar demasiada salvinorina y sobredosificarse. Para la vaporización segura de salvinorina se requiere el pesado de la dosis en una balanza química muy precisa, capaz de pesar la salvinorina en microgramos (millonésimas de un gramo). Esas balanzas analíticas cuestan más de \$1000. ¡La vaporización de salvinorina definitivamente no es para principiantes!

¿CUAL METODO ES MEJOR?

Existen pros y contras para cada método. Algunas personas reportan que el cilindro dá un viaje más fuerte, profundo y visionario que el fumado. Otras reportan que masticar hojas no funciona para ellos, pero fumar sí. Para aquellos que consiguen un efecto muy pequeño de cualquiera de los métodos, ambos pueden ser combinados. Primero mastique un cilindro y luego, después de escupir, encienda una pipa.

Si usted actualmente fuma tabaco o mariguana, probablemente preferirá el fumado.

Si usted es un no-fumador, probablemente preferirá el método del cilindro; fumar cualquier cosa, incluso Salvia, no puede ser bueno para sus pulmones. A diferencia del fumado, un cilindro no daña sus pulmones.

Se requiere mayor cantidad de hojas para un viaje con cilindro que para

un viaje con fumado. Si usted tiene muy poco material disponible, el fumado puede ser una forma de conseguir un viaje con la pequeña cantidad que posee.

Los viajes con cilindro vienen más lentamente pero duran mayor tiempo. Por tanto son mejores para explorar el mundo de la Salvia. Son mejores para una meditación profunda.

Hasta que sepa cuán sensitivo es usted hacia la Salvia no experimente con extractos, vaporizadores o salvinorina. Masticar el cilindro o fumar hojas será suficiente para llevar a muchas personas hasta el nivel 5. No hay necesidad para esas personas de experimentar con formas más fuertes y peligrosas de tomar Salvia.

Hay algunas personas que incluso luego de muchos intentos encuentran que aún son 'cabeza-duras' para la Salvia. Ellas nunca experimentan mucho más que un ligero efecto del fumado de hojas o de la masticación de un cilindro. Algunos de esos cabeza-duras lograrán resultados satisfactorios si mastican un cilindro y luego, fuman inmediatamente después de escupirlo.

Otras encontrarán incluso ésto inefectivo. Para ellas, un extracto 5x o el uso de un vaporizador, podría merecer la exploración. Tales cabeza-duras son una minoría.

Vea cuán sensitivo es usted antes de arriesgarse con esos métodos más fuertes. Si usted tiene una sencibilidad normal hacia la Salvia, esos métodos extremos deben ser evitados. Con un poco de práctica, masticar el cilindro, fumar o combinar ambos métodos trabaja suficientemente bien para la mayoría. Muchas personas hallan que toma varios encuentros con la Salvia antes de que una experiencia significativa ocurra. Así que no se etiquete a usted mismo como un cabeza-dura demasiado pronto.

CUIDADORES Y SEGURIDAD

¿CUANDO NECESITA USTED UN CUIDADOR?

Un cuidador es absolutamente esencial si usted está tomando dosis en las cuales se pueda asustar, confundirse, dañarse, caer, incendiar su casa o hacer cualquier cosa que pudiese dañar a otros. Tenga a un cuidador presente si usted es nuevo en la Salvia, cuando está experimentando con una forma más fuerte de las que ha usado anteriormente o está usando una forma más poderosa de tomarla.

Un usuario experimentado de Salvia que está masticando un cilindro, puede frecuentemente escoger hacerlo solo, lo cual puede ser lo bastante seguro. Pero tener un placentero, sensitivo y sobrio cuidador es un requisito absoluto si está utilizando vaporización, fumando hojas potenciadas con extracto o utilizando salvinorina pura. Fumar las hojas usualmente cae en términos medios de riesgo. Use su buen juicio. Muchas personas lo han hecho sin un cuidador, pero éste no es mala idea.

¿QUE DEBE UN CUIDADOR SABER Y HACER?

El cuidador debe recordar que sin importar cuán loco actúe el viajero, los viajes de Salvia son de corta duración. No debe llevar al viajero a la sala de emergencias. Debe mantener al viajero seguro y esperar a que termine su odisea. Si no puede mantener al viajero seguro, conseguir ayuda. De otro modo, debe mantener el asunto en privado. En un lapso de cerca de una hora (usualmente mucho menos) el viajero regresará a la normalidad. Es muy valioso mantener ésto presente cuando las cosas se ponen difíciles. Ayuda el haber probado la Salvia antes de ser un cuidador para otra persona. La experiencia con otros psicodélicos puede no ser tan útil. El cuidador debe saber que la Salvia es diferente de ellos. Tocar para 'atterrizar' al viajero trabaja para algunos viajes con LSD, pero puede ser muy amenazante para alguien en un viaje con Salvia. Si planea tocar al viajero, se debe aclarar con él **ANTES** de que el viaje

inicie.

LOS TRABAJOS DEL CUIDADOR

El cuidador tiene tres trabajos.

El trabajo principal es mantener al viajero a salvo y mantener a aquellos alrededor de él a salvo. Esto viene antes que todo lo demás. Los peligros principales son físicos, no emocionales. Su trabajo es de guardián, no de psicoterapeuta. No debe utilizar fuerza física a menos de que nada más dé resultado. El uso de fuerza física puede resultar en el viajero o el cuidador siendo lastimados. Podría ser malinterpretado como un ataque.

Nunca debe dejar que la Salvia sea usada si armas de fuego, cuchillos o cualquier objeto peligroso está presente. Debe tomar las llaves del automóvil del viajero para resguardarlas antes de que inicie el viaje. Mantener al viajero seguro de caídas, golpes en la cabeza, objetos filosos, salir por las ventanas, deambular en las calles, llamas, superficies calientes y objetos rompibles. Pero debe dejar al viajero moverse solo en un área segura. No tratar de restringirlo físicamente, a menos que sea absolutamente necesario. Redireccionarlo. Hablar suavemente. Gentilmente retirar los objetos peligrosos. Utilizar el menor contacto físico posible (el viajero confundido puede pensar que el contacto es un ataque o violación y reaccione hacia el peligro imaginado). El cuidador podría tener que manejar intrusiones inesperadas de extraños u otras situaciones sociales torpes.

El segundo trabajo del cuidador es reasegurar. Casi siempre, la repetición de explicaciones simples pueden ayudar a un viajero asustado, por ejemplo, "Estás seguro, no dejaré que nada te haga daño.", "Sólo estás teniendo un mal viaje, te sentirás mejor en unos minutos.", "Tu nombre es.....", "Yo soy ti amigo.....". Si no es preciso hablar, permanecer callado. El silencio es casi siempre menos amenazante para el viajero confuso, que el tratar de descifrar lo que el cuidador está diciendo.

El tercer trabajo del cuidador es ayudar al viajero a recordar posteriormente el viaje. Hay muchas formas. Usar un cuaderno de notas y registrar todo lo que el viajero dice y hace. Más tarde puede preguntarle acerca de lo registrado. Esto puede refrescar la memoria del viajero respecto a lo que ha experimentado. Otra técnica, en caso de que el viajero no esté muy ido como para hablar durante el viaje, es preguntarle repetidamente "¿qué estás experimentando ahora?". Un cuaderno de notas o un grabador pueden ser usados para registrar las respuestas. Debido a que algunos viajeros preferirán que el cuidador permanezca en silencio y no registre nada, se debe aclarar lo que se hará previamente.

GUIAS DE SENTIDO COMUN

· NUNCA USE SALVIA SI HAY ARMAS DE FUEGO PRESENTES.

Nunca use Salvia cuando hayan cuchillos al alcance.

· NUNCA MANEJE CUANDO TOME SALVIA

· Escoja el momento y lugar para el viaje cuidadosamente. La privacidad y la seguridad son indispensables. Sea muy cuidadoso con las alturas y llamas vivas como las de las velas. No tome Salvia cuando pueda ser interrumpido por llamadas telefónicas, visitas, mascotas, niños, etc.

Apague su teléfono y programe la máquina contestadora para grabar las llamadas silenciosamente. Usted podrá responder las llamadas en un par de horas, una vez que esté sobrio.

· Piense bien qué cantidad tomará y cómo la tomará.

· Luego de que todo el material de fumado esté con seguridad apagado acuéstese en una cama, en un colchón o en alguna alfombra. Usted está

mucho más seguro acostado de lo que estaría deambulando por ahí. Permanezca tranquilo por el resto del viaje. Se puede viajar mejor con los ojos cerrados.

- Tenga a un cuidador (esto es especialmente importante si usted es nuevo con la Salvia, está tomando una alta dosis, está fumando extracto o está usando un sistema de ingestión muy potente, como la vaporización).
- Ofrézcase para cuidar de otros.
- Si usted tiene problemas de salud mental, no tome Salvia sin consultar antes con su terapeuta o doctor.
- Practique y promueva el uso responsable de la Salvia. No la dé a menores de edad o a personas violentas o inestables. No la comparta con extraños. Sepa bien a quién se la está dando y por qué la desean usar. ¿Por qué buscarse problemas?
- Nunca tome Salvia mientras trabaja o está en público. Manténgala en privado. No es para conciertos. No es para fiestas grandes.
- No mezcle la Salvia con alcohol. Evite mezclarla con otras drogas. Si bien usuarios experimentados han probado combinaciones, las mismas no son para principiantes de Salvia y es ciertamente más riesgoso que simplemente usar Salvia sola.
- Sea en extremo cuidadoso con fuegos – velas, encendedores, fuego, etc. cuando use Salvia.

- Sea muy cuidadoso respecto a utilizar extractos vaporizados, hojas vaporizadas o al fumar hojas fortalecidas con extracto. Esas actividades requieren de la presencia de un cuidador. Masticar cilindros o fumar hojas es mucho menos propenso a producir comportamiento descontrolado.
- Nunca use salvinorina pura a menos que usted cuente con las balanzas extremadamente precisas que se necesitan para pesar las dosis medidas en microgramos y sepa exactamente la cantidad que puede tomar en forma segura. Aún en el caso de que reúna estos requerimientos, se debe contar con un cuidador presente.

LA PLANTA Y SU CUIDADO

Si usted cultivará su propia Salvia, debe leer ésto. Si usted prefiere comprar hojas secas, puede no leer esta sección. La Salvia divinorum es una planta semi-tropical perenne. Esto significa que puede crecer año tras año, pero solamente si no es expuesta a temperaturas de congelación. Es una planta verde con hojas grandes y un tallo verde, grueso, carnoso y cuadrado distintivo. Puede crecer muchos metros de altura si las condiciones son favorables. Cuando crece lo suficiente, las ramas se doblarán o quebrarán y pueden producir raíces si entran en contacto con tierra húmeda. Aunque la Salvia divinorum puede florecer bajo condiciones de luz natural, casi nunca produce semillas que germinen. Por tanto, la planta es diseminada por cortes. Las hojas son ovaladas, ligeramente serradas y pueden ser bastante grandes (hasta 9 pulgadas de largo). Son por lo general color verde esmeralda, pero pueden ser verde amarillento e incluso amarillas. Están frecuentemente cubiertas con una fina capa de bellos muy cortos (pubescencia), que dan a las hojas una apariencia similar al satín bajo la influencia de ciertas fuentes de luz.

Las plantas son amantes del agua, pero crecen mejor en sombra parcial, en un suelo bien humedecido pero bien drenado. Las raíces no deben permanecer inundadas o podrían pudrirse, matando la planta.

La *Salvia divinorum* puede ser cultivada en interiores en cualquier clima. Es una hermosa planta para el hogar.

Usted puede cultivar *Salvia divinorum* en exteriores durante todo el año, si usted vive en un clima húmedo semi-tropical, con un suelo bien drenado pero bien húmedo, con un alto contenido de materia orgánica. Si usted vive en un clima más frío o seco puede aún cultivar la *Salvia* en exteriores, pero deberá hacerlo con algún cuidado, asegurándose de que está protegida de la congelación, siendo regada frecuentemente y humidificada cuando la humedad del ambiente es baja. La *Salvia* no sobrevivirá al congelamiento. Puede ser cultivada en exteriores, en recipientes que puedan ser introducidos cuando hace demasiado frío (abajo de 40 grados Fahrenheit). De esa forma puede ser cultivada en exteriores en el verano y en interiores en invierno.

La *Salvia* le dirá cuándo se está secando demasiado – sus hojas se caerán. Asegúrese de humedecerla al primer signo de pérdida leve de hojas, no deje que la planta pierda muchas hojas. El suelo debe drenar bien pero debe mantenerse húmedo.

Si planta la *Salvia* en recipientes, **ASEGURESE DE QUE EL RECIPIENTE ES GRANDE, CUANTO MAS, MEJOR.** Al duplicar el diámetro del recipiente se puede incrementar el campo de producción de hojas en más de cuatro veces. Aunque su disponibilidad de espacio pueda limitar el tamaño posible del recipiente, use el más grande posible. Debe tener huecos para el drenaje. Colocar piedrecillas (o pedacitos de estereofón) en el fondo del recipiente ayudará a promover el drenaje, por

lo que evitará la pudrición de la raíz. El suelo vendido para sembrar trabajará bien. Agregar vermiculita o perlita al suelo utilizado es bueno pero no indispensable.

La Salvia necesitará fertilizante. No hay ninguno que sea claramente mejor. Resultados satisfactorios pueden ser obtenidos con diferentes productos. Algunos de ellos son:

- Scotts All-Purpose Plant Food (Alimento para plantas todo propósito) (18-13-13) ligeramente esparcido en el suelo alrededor de la planta una vez cada seis semanas.
- MirAcid agregado a el agua una vez por semana (1/4 de cucharada por galón)
- Peters Professional Soluble Plant Food (Alimento soluble profesional para plantas)(15-30-15) agregado a el agua una vez por semana (1/4 de cucharada por galón)

Menos recomendables son:

- Emulsión de pescado (es útil sólo para uso en exteriores, pues tiene muy mal olor)
- Extracto de huesos (¡las mascotas pueden escarbar su Salvia si lo usa!)

Si cultiva la Salvia dentro de su casa saque las plantas cuando esté suficientemente tibio y permita que les caiga la lluvia. Esto evitará que se hagan formaciones salinas en el suelo que podrían matar su planta.

La Salvia divinorum puede estar bien en una variedad diferente de condiciones de luz. Está mejor con algunas horas de luz solar parcial al día. Puede estar bien creciendo en interiores cerca de una ventana. Puede resistir mayor cantidad de luz solar si se mantiene bien húmeda. También puede soportar sombra profunda moderada. Cuando se varíe la cantidad de luz o humedad, debe ser hecho gradualmente. Dándose tiempo suficiente, la Salvia es muy adaptable, pero puede tomar

semanas para que se acostumbre a un nuevo ambiente.

Muchas pestes pueden atacar a la Salvia. La mosca blanca es un gran problema para las plantas cultivadas en invernadero. Áfidos, babosas, orugas, ácaros e insectos mayores pueden también dañar sus plantas. La pudrición de raíces y tallo pueden ser problemas. Manchas fungales pueden aparecer en las hojas. No es conocido cuáles virus de plantas pueden atacar la Salvia divinorum, pero probablemente algunos lo hacen, pues muchos atacan otras salvias.

Los áfidos e insectos mayores pueden ser removidos con una mota de algodón sumergida en alcohol isopropílico (para fricciones).

El daño de las babosas puede ser reducido al cultivar la Salvia en recipientes elevados sobre una repisa. Algunas pueden aún llegar y atacar sus plantas. Mantenga vigilancia sobre esas resbalosas plagas. ¡Una sola babosa puede comer una tremenda cantidad de Salvia! La cerveza puede ser usada para atraer y ahogar las babosas. Coloque un plato hondo con cerveza en una depresión en el suelo; el borde del plato debe estar al mismo nivel del suelo, con lo que las babosas podrán entrar en él, emborracharse y ahogarse.

Los ácaros pueden ser controlados disolviendo detergente en agua para ser atomizado sobre las hojas, incluyendo la parte inferior de éstas. Repita 3 veces a intervalos de dos semanas. Precaución : ha habido algunos reportes de jabón que daña las hojas. No utilice demasiado.

El uso de una manguera de jardín en exteriores, o un atomizador en interiores para aplicar agua a presión, tanto a la parte superior como inferior de las hojas, puede ser más efectivo para controlar ácaros. Su manguera de jardín es su mejor amiga al combatir la mayoría de las pestes de exteriores. Atomice las hojas suficientemente fuerte como para eliminar las pestes, pero no tanto como para dañar las hojas. No olvide atomizar el lado inferior de las hojas también.

La Salvia divinorum es propagada por cortes, no por semillas. Los cortes pueden ser enraizados tanto en agua como directamente en el suelo. Aquí está cómo :

ENRAIZANDO EN AGUA: Corte una rama (de 4 a 8 pulgadas de largo) que tenga algunas hojas. Inmediatamente después, colóquela en cerca de una pulgada y media de agua en un vaso pequeño de vidrio. Solamente un corte debe ser puesto en cada vaso, así las raíces que se desarrollen en un corte no se extenderán a otro.

Es mejor si la rama es cortada justo debajo de un nódulo, pues los nódulos son los lugares con mayor tendencia a desarrollar raíces. Aunque no es necesario realizar el corte allí, el hacerlo tiene la ventaja de que no habrá material del tallo sumergido en el agua por debajo del nódulo, lo cual es importante, pues el tallo es más susceptible a pudrirse de lo que es el nódulo.

Asegúrese de que el corte es hecho con tijeras limpias o un cuchillo limpio, para que la herida no sea atacada por gérmenes y hongos que pueden causar la podrición del corte. Elimine todas las hojas grandes, pero deje algunas pequeñas. Coloque una jarra o vaso de vidrio transparente (o bolsa de plástico transparente) volteado sobre la planta, para que sirva de tienda de humedad. Colóquelo donde reciba alguna luz solar. Cambie el agua diariamente. Puede ser buena idea el usar agua hervida fría. Si el agua con que cuenta es clorada, el hervido puede eliminar el cloro. Agua sin clorar puede estar contaminada con gérmenes de enfermedades de las plantas, pero el hervido debe matarlos. El enraizado en agua es exitoso 3/4 partes de las veces (el resto de las veces el corte se pudre y muere).

En dos semanas las raíces empezarán a desarrollarse. Cuando tengan de 1/2 a 1 pulgada de largo, transplántelas a suelo en un recipiente con

buen drenaje. Continúe cubriendo el recipiente con una jarra o vaso de vidrio transparente (o bolsa de plástico transparente) para que sirva de tienda de humedad, hasta que la planta parezca vigorosa. Luego, gradualmente elimine la dependencia de la tienda de humedad.

ENRAIZANDO EN SUELO: La Salvia puede ser enraizada en directamente en suelo. Materiales necesitados :

- suelo para sembrar.
- dos vasos plásticos desechables.
- algo de polvo enraizador (es una hormona de enraizamiento que también contiene un fungicida) que se consigue en cualquier lugar donde vendan plantas.
- una bolsa de 1 galón delgada, de plástico transparente
- una liga de hule.
- agua.

Método :

Haga algunos agujeros pequeños en uno de los vasos para el drenaje. Llene el vaso 2/3 de su totalidad con suelo para sembrar. Usando un lápiz o un dedo, haga un agujero en el suelo, de cerca de 2 pulgadas de profundidad. El suelo está ahora listo para su corte. Usted debe ahora preparar el corte. Con tijeras limpias o un cuchillo limpio corte un trozo de tallo (de 4 a 8 pulgadas de largo) de una planta saludable. Deje algunas hojas (pequeñas) en la parte superior. Elimine las hojas grandes del corte. Inmediatamente después de cortar el trozo de tallo, colóquelo en agua limpia. Realice el corte justo debajo de un nódulo, pues las raíces se desarrollarán de éste. Mantenga la superficie del corte mojada. Introduzca el corte cerca de una pulgada arriba de la herida dentro del polvo enraizador. Sacuda para eliminar el exceso. El polvo enraizador es de alguna forma tóxico, por lo que debe lavar sus manos después de manipularlo. Coloque el corte cubierto de polvo en el agujero hecho en el

suelo. Gentilmente presione el suelo alrededor del corte, manteniéndolo en su sitio mientras se rellena el agujero. Agregue agua al corte plantado hasta que alguna escurra por los orificios hechos al vaso para el drenaje. Ponga el vaso con el corte dentro del segundo vaso plástico (que está allí para atrapar el agua sobrante). Usted querrá poner una pequeña pieza de plástico o madera en el fondo del vaso exterior, el cual actuará como espaciador. Esto permite suficiente espacio para que el exceso de agua sea drenado. Coloque la bolsa de plástico transparente sobre el corte, utilizando la liga de hule para mantenerla en su lugar. La liga de hule debe estar en la parte exterior de la bolsa y la bolsa debe estar fuera de ambos vasos. La liga de hule mantiene la bolsa contra los vasos. Como la bolsa plástica actúa para conservar humedad, el humedecimiento frecuente no es necesario. Luego de varias semanas usted podrá transplantar la ahora enraizada planta a un recipiente más grande.

PROCESANDO EL MATERIAL DE LAS PLANTAS

Las hojas secas de *Salvia divinorum* pueden ser guardadas en jarras cerradas protegidas de la luz. De esta forma, las hojas pueden probablemente mantener su potencia por muchos años, quizá indefinidamente (nadie sabe cuánto tiempo). Si usted está cultivando su propia *Salvia*, probablemente querrá secar la hojas para su uso en el futuro. Hay muchas formas de hacerlo :

Método1) Regalo de la Naturaleza

Espere hasta que las hojas mueran o caigan y recoléctelas. Colóquelas en un plato dentro de un habitación con baja humedad. Voltéelas con frecuencia. Espere hasta que estén secas, entonces almacénelas. No se sabe si las hojas que caen naturalmente son más fuertes o más débiles que las hojas arrancadas de la planta.

Ventaja : usted no privará a sus plantas de hojas que necesita.

Desventaja : usted tendrá que esperar hasta que la planta esté lista para hacer una donación a su causa. Las hojas pueden no estar en óptimas condiciones.

Método 2) Salvia Tabaco

Tome algunas hojas grandes recientemente colectadas y colóquelas una sobre la otra (como acomodando hojas de papel). Entonces haga un corte a través de la pila de hojas, dejando tiras de 1/4 de pulgada.

Apílelas sobre un plato en un montón. Voltéelas dos veces al día, hasta que estén secas, pero no crujientes.

Ventaja : el 'tabaco' resultante se dice que produce un fumado más suave que las hojas totalmente secas.

Desventaja : es posible que este secado parcial y lento resulte en hojas mas débiles, que pueden no mantenerse tan bien almacenadas como lo harían las hojas totalmente secas.

Método 3) Deshidratador de Comida

Seque las hojas en un deshidratador de comida, los que se pueden conseguir donde se vendan accesorios pequeños de cocina. El secado es muy rápido y efectivo. Seque hasta que todas las hojas, incluyendo el tallo estén crujientes. Toque las hojas con sus dedos para asegurarse de que están totalmente secas. Los tallos deben quebrarse si se les aplica presión.

Ventajas : velocidad, secado total y conveniencia.

Desventaja : costo de comprar un deshidratador.

Método 4). Salvia Secada al Horno.

Coloque las hojas en un plato resistente al calor. Hornéelas hasta que estén secas a no más de 150 grados Fahrenheit.

Ventajas : velocidad, secado total y conveniencia.

Desventajas : de algún modo es menos conveniente que usar un deshidratador de comida. Puede ser difícil mantener la temperatura del horno en un rango óptimo.

Método 5). Secado con Cloruro de Calcio

El cloruro de calcio está disponible en muchas ferreterías. Ponga una

cantidad suficiente de cloruro de calcio en el fondo de un contenedor de plástico. Coloque una pieza de papel metálico sobre el CaCl_2 y coloque las hojas a ser secadas sobre éste. Doble los bordes del papel metálico para prevenir que las hojas toquen el CaCl_2 . Luego cierre herméticamente el contenedor. Las hojas deberán estar secas en 2 días. Ventaja : secado muy completo y total.

Desventajas : menos conveniente que otros métodos. Lento.

Como sea que usted seque las hojas, colóquelas en una jarra cerrada, lejos de la luz. Un frasco de vidrio limpio con tapadera de rosca o de presión trabaja muy bien. Guardar el recipiente en un gabinete de cocina o botiquín de medicinas lo mantendrá alejado de la luz. Almacenadas de esta forma, las hojas mantendrán su potencia por muchos meses, incluso años.

CIERRE

Habiendo leído el presente manual, usted sabe ahora lo suficiente como para iniciar el sendero verde de la Salvia. Puede usted siempre encontrar un sendero con corazón. Puede esta sobresaliente planta-maestra guiarlo hacia un grandioso auto conocimiento, armonía, maravilla y gozo.

La guida per l'uso di Salvia divinorum

Data della nuova versione: 14 ottobre, 2000

(la versione aggiornata può essere sempre trovata in: <http://salvia.lycaeum.org/usersguide.html>)

Creata da " Sage Student ", con i contributi e la pubblicazione in html di Daniel Siebert

PERCHÈ SIETE STATI FORNITI DI QUESTA GUIDA

Forse un amico vi ha dato *una talea* di Salvia, o forse avete comprato le foglie secche, un estratto, o una pianta vivente. In questo caso, dovete leggere questa guida. È stata scritta per insegnarvi a lavorare con quest'erba in un modo che sia proficuo per voi e nella maniera più sicura possibile. Vi insegnerà anche come crescere e curare le vostre *piante di Salvia divinorum*.

Molta gente ora *sta provando* Salvia *divinorum*, molta di più che parecchi anni fa; sta diventando popolare e dibattuta. Salvia *divinorum* è una potente erba visionaria – NON è placebo; ma Salvia è unica. Non è un " acido legale. " Non è " marijuana legale. " Non è un sostituto per qualunque altra droga. Non è un analogo di qualunque altra droga. È estremamente importante che conosciate qualcosa sui suoi effetti, i suoi possibili pericoli e su come evitare questi pericoli prima di provarla.

NON usate Salvia fino a che non abbiate letto tutta questa guida.

QUALUNQUE ALTRA DROGA ABBIATE MAI PROVATO, IL SUO USO NON VI HA PREPARATO PER **Salvia**. Salvia È UNICA. Lei ha molto da offrire: effetti psicoattivi affascinanti, l'aumento di sensazioni nel campo sensuale, viaggi magici, incantesimi, apparenti viaggi nel tempo, comprensioni filosofiche, esperienze spirituali e forse persino guarigione e divinazione, ma **Salvia non tollera l'ignoranza**. Se è usata stupidamente può rivoltarsi contro di voi. Imparando quello che abbiamo scritto in questa guida potete evitare grossi problemi.

È GRATIS .

Nessuno dovrebbe chiedere ricompense per la diffusione di questa guida. Dovrebbe essere data gratis alla gente ogni volta che le piante o le foglie sono date via, o sono vendute. Nessuno dovrebbe realizzare alcun profitto con la guida. È stata scritta come pubblico servizio.

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Questa guida dovrebbe essere data gratis a chiunque sia interessato a Salvia. Stampate questa guida nella sua interezza. Datela gratis a tutte le persone con cui condividete le foglie o le piante. Se la copiate, copiate TUTTO . Non cambiatela. Fornitela come è. Via via che si impara qualcosa di nuovo su Salvia, questa guida sarà aggiornata. Per questo motivo, è importante che la DATA di VERSIONE (vedi sopra) sia inclusa nella copia che date agli altri. In questo modo, la persona che la ottiene potrà sapere se la sua copia è aggiornata.

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Questa guida è aggiornata frequentemente. La versione più recente può essere trovata sempre a:

<http://salvia.lycaeum.org/usersguide.html>. Mi dispiacerebbe vedere versioni obsolete girare su Internet.

Così non copiate da altri siti Web. Se desiderate rendere la guida accessibile da un altro Web site, includete semplicemente un collegamento al suddetto URL.

APPENA UN INIZIO

Questa guida è solo un inizio. Dopo la lettura, voi potreste avere ancora voglia di imparare altre cose. Una risorsa eccellente per le informazioni supplementari è *il Website del centro d'informazione e di ricerca su Salvia divinorum*: <http://salvia.lycaeum.org/>. Questo website, creato da Daniel Siebert, fornisce una ricca fonte di informazioni, tra cui:

-  La versione più aggiornata *della guida all'uso di Salvia divinorum*.
-  Le FAQ di *Salvia divinorum*.
-  Immagini *delle piante di Salvia divinorum* e della struttura chimica di salvinorin A.
-  Rapporti sperimentali di viaggio.
-  Studi e articoli scientifici *su Salvia divinorum*.
-  Collegamenti a molti altri siti su Salvia.
-  Le informazioni su come iscriversi a vari forums di discussione in linea su *Salvia divinorum*.
-  Lavori artistici ispirati da *Salvia divinorum*.
-  Un calendario dei congressi, dei seminari e delle conferenze.
-  L'altare *virtuale di Salvia divinorum*.

PREAMBOLI FONDAMENTALI DI *Salvia divinorum*

Salvia divinorum è una specie di salvia (il genere *Salvia*). Ci sono circa 1000 specie di salvia in tutto il mondo, ma *Salvia divinorum* è l'unica specie conosciuta che induca visioni. Salvia è un membro del vasto gruppo di piante sistemate nella famiglia delle **Labiatae**. Poiché la menta è un membro ben noto di questa famiglia, a volte ci si riferisce ad essa come "la famiglia della menta". *Salvia divinorum* è una pianta bella che si può tenere in casa e può essere coltivata anche solo per questo motivo, ma la maggior parte della gente che la fa crescere è interessata ai suoi affascinanti effetti psicoattivi. Il nome botanico di *Salvia divinorum* significa "la salvia del veggente." In condizioni ottimali, presa nel giusto modo, Salvia produce una condizione unica "di divino inebriamento." Per centinaia di anni, è stata usata nelle cerimonie religiose e di guarigione dagli indiani Mazatechi, che vivono nella provincia di Oaxaca, nel Messico.

Attualmente (29 settembre, 2000), né *Salvia divinorum* né il suo principio attivo, **salvinorin A**, sono sostanze controllate - in nessuna parte del mondo. È completamente legale crescere, comprare e vendere le piante o le foglie di Salvia.

Gli effetti di Salvia sono molto differenti da quelli dell'alcool; ma come l'alcool altera la coordinazione. **MAI, IN NESSUNA OCCASIONE, NON TENTATE MAI DI GUIDARE SOTTO L'INFLUENZA DI *Salvia* -- FARLO POTREBBE ESSERE MORTALE!**

Per molti aspetti *Salvia divinorum* è in una categoria a sé. Non c'è nessun'altra erba o droga che le assomigli veramente. È sbagliato confrontarla con altre sostanze psicoattive. È un'erba visionaria davvero unica.

Salvia contiene una sostanza chimica chiamata salvinorin A (citata spesso come salvinorin e basta). Salvinorin è responsabile degli effetti che alterano la mente di Salvia. Chimicamente non è collegata con nessuna altra droga psicoattiva. Diversamente dalla maggior parte dei composti visionari, **non è un alcaloide**. Anche se non causa abitudine (assuefazione), il salvinorin puro è estremamente efficace.

Dosi di soltanto alcune centinaia di **microgrammi** (milionesimi di grammo) possiederanno un effetto e dosi superiori a 1 milligrammo (1/1000 d'un grammo) sono troppo forti per essere maneggiate agevolmente dalla maggior parte della gente . A causa della sua estrema potenza, Salvinorin puro non dovrebbe essere mai usato, sempre che il dosaggio non sia stato precisamente misurato con bilance chimiche esatte. Per fortuna, la foglia di Salvia è centinaia di volte più leggera del salvinorin; quindi la foglia di Salvia può essere utilizzata con molta più sicurezza del salvinorin puro.

La foglia di Salvia è abbastanza sicura per quanto riguarda gli effetti fisici. È molto delicata sul corpo. Nessuno è mai morto con una dose eccessiva di salvia. Salvia non è uno stimolante, non è un sedativo, non è un narcotico, non è un tranquillante. Come molti enteogeni, può indurre visioni, tuttavia è abbastanza differente dagli altri enteogeni. Dale Pendell, nel suo libro ***Pharmako/Poeia***, assegna *Salvia divinorum* ad una categoria farmacologica unica, che chiama " existientia. " Questo termine allude all'illuminazione filosofica (*tra gli effetti* . NdT) di Salvia, che sembra far luce sulla natura dell'esistenza in sé. Daniel Siebert ha proposto il termine " *enchantogen* " (*incantogeno*) - un neologismo - con il significato di " *una sostanza che produce incantesimo* ". Nessuno sa come il salvinorin operi nel cervello. Sappiamo che agisce diversamente che qualunque altra sostanza psicoattiva conosciuta.

Salvia NON È UNA DROGA DA FESTE o situazioni di divertimento collettivo .

Questo è importante da capire. Salvia non è " divertente " nello stesso modo in cui può esserlo l'alcool oppure la canapa. Se provate Salvia durante una serata divertente con amici (un party) probabilmente non ricaverete una bella esperienza.

Salvia è un' erba che modifica la coscienza; può essere usata in una ricerca di visione, o in un rituale di guarigione. Nella giusta pratica, Salvia permette di avere visioni. È un' erba con una lunga tradizione di uso sacro. È utile per la meditazione profonda. È meglio quando è presa in una stanza tranquilla, quasi buia; o da soli (se non si ricorrerà all'assistenza di *sitters*, vedere sotto per la discussione sui *sitters* [*d'ora in poi verrà usato per indicare "assistenti/guardiani"*]. NdT), o con uno o due buoni amici presenti. Dovrebbe essere presa in silenzio o (a volte) con piacevole musica soft.

VIAGGI DI Salvia: CHE COSA PREVEDERE

La gamma di intensità di Salvia varia da un effetto sottile ad uno estremamente potente. Ciò vale sia per le foglie masticate che per le foglie fumate e per le tinture orali, ad esempio la " Sage Goddess Emerald Essence®. " La forza del viaggio dipenderà da quanta ne prendete, dal modo in cui la prendete e dalla vostra specifica chimica corporea.

I viaggi di Salvia differiscono da quelli prodotti da altre droghe o erbe visionarie e Salvia presenta molti vantaggi:



Non potete prendere una dose eccessiva con conseguenze mortali usando le foglie di Salvia



Salvia non provoca assuefazione



Salvia è legale



I suoi effetti sono di breve durata , dopo di che tornate velocemente alla normalità



Salvia produce raramente spiacevoli effetti collaterali o "hangover".



Il rumore e la distrazione interferiscono con il viaggio. Quando siete "in Salvia", guardare la TV non è altro che un fastidio, mentre stare seduti attorno a un fuoco di accampamento nei boschi, di notte, è meraviglioso.

Dal momento che Salvia divinorum può alterare le percezione e il comportamento, **non deve mai**

essere usata in un ambiente pubblico— farlo potrebbe attirare un'indesiderabile attenzione.

Soprattutto se non siete abituati , o se state sperimentando un preparato potente come un estratto, dovrete avere accanto una persona sobria per farvi da baby sitter , per essere sicuri che non facciate qualcosa di pericoloso, come rovesciare in terra candele accese o scavalcare una finestra.

Quando Salvia viene fumata , gli effetti salgono molto velocemente, in meno di un minuto. Se è masticata i primi effetti si notano dopo circa 15 minuti e arrivano al pieno effetto in circa 30 minuti. Se viene presa con un estratto orale, gli effetti salgono in 15 minuti o meno. Solitamente i "trip" di Salvia durano da 15 minuti ad un'ora. Occasionalmente possono durare fino a 2 ore.

Per sicurezza è importante non guidare né utilizzare alcun macchinario per diverse ore dopo che il "trip" sembra ormai finito.

La maggior parte delle persone non prova effetti spiacevoli dopo l'uso di Salvia, benché qualcuno, qualche volta, denunci una leggera emicrania. Se Salvia è fumata, il fumo può irritare i polmoni. I trip di Salvia paiono avvenire a vari livelli. Una scala di livelli soprannominata " S-A-L-V-I-A " è stata congegnata per valutare i "trip". Ogni lettera della parola Salvia sta per un altro livello di viaggio. La scala descrive 6 livelli di intossicazione, ognuno più intenso del precedente. L'intensità complessiva del trip di Salvia si ottiene dal livello più alto raggiunto durante il corso del viaggio.

Scala di valutazione di viaggio S-A-L-V-I-A

 Livello 1 –“**S**” significa effetto SOTTILE (delicato). La sensazione è quella di percepire che “qualcosa” sta accadendo, anche se è difficile dire veramente che cosa. Si possono notare rilassamento e incremento nell'apprezzamento sensuale . Questo livello delicato è utile per meditare e può facilitare il piacere sessuale.

 Livello 2-“**A**” sta per percezione “ALTERATA” (modificata). I colori e le tessiture (visive) sono più pronunciati. L'apprezzamento della musica si può accrescere. Lo spazio può sembrare di maggiore o minore profondità rispetto al solito. Ma a questo livello non ci sono visioni. Il pensiero appare meno logico e più giocoso; si possono notare difficoltà con la memoria a breve termine.

 Livello 3 – “**L**” sta per LEGGERO stato visionario. Visualizzazioni ad occhi chiusi (precisa “imagery” con gli occhi chiusi; disegni di frattali, immagini geometriche e con contorni a forma di foglie di vite, visioni di oggetti e di altre forme/modelli decorativi). L'imagery è spesso bi-dimensionale. Se accadono effetti visivi ad occhi aperti, questi sono spesso vaghi e sfuggitivi. A questo livello accadono fenomeni simili alle **visioni ipnagogiche** che qualcuno sperimenta prima di addormentarsi. Sempre a questo livello , le visioni sono sperimentate come “eye candy”(delizia per gli occhi), ma non vengono confuse con la realtà.

 Livello 4 – “**V**” sta per “VIVIDO stato visionario”. Si verificano complesse scene tridimensionali realistiche. A volte possono essere sentite delle voci. Tenendo gli occhi aperti il contatto con la realtà consensuale non sarà perso interamente, ma quando chiudete gli occhi vi potete dimenticare della la realtà consensuale e prendere del tutto parte ad una scena simile al sogno. Viaggi sciamanici in altre terre -- straniere o immaginarie; sono possibili incontri con esistenze “altre” (entità, spiriti) o viaggi nel tempo verso differenti età. Potete persino vivere la vita di un'altra persona. A questo livello siete entrati nel mondo sciamanico. O se preferite: siete " nel tempo del sogno " di Salvia. Con gli occhi chiusi, avvertite le fantasie (sogni come situazioni con una base di storia tutta loro). Sempre che abbiate gli occhi chiusi potete ritenere che stiano realmente accadendo. Ciò differisce dal "linguaggio figurato" dell' “eye candy imagery” del precedente Livello 3.

 Livello - 5 “**I**” corrisponde a “esistenza IMMATERIALE”. A questo livello si può cessare di ricordare di avere un corpo. La coscienza rimane ed alcuni processi di pensiero sono ancora lucidi, ma

si è completamente coinvolti nell' esperienza vissuta internamente e il contatto con la realtà consensuale è totalmente perduto. L' individualità può essere persa; si sperimenta la fusione con la Divinità, la mente, la coscienza universale, o fusioni bizzarre con altri oggetti -- reali o immaginati (per esempio esperienze di fusione con una parete o una parte di mobili). A questo livello è impossibile operare nella realtà consensuale, ma purtroppo qualche persona non rimane calma e immobile e va in giro in questa condizione di estrema confusione. Per questo motivo una sitter è essenziale per la sicurezza di chi viaggia in questi profondi livelli esperienziali. Per la persona che lo sperimenta, il fenomeno può risultare terrificante o fin troppo piacevole; ma per un osservatore esterno l'individuo può sembrare confuso o disorientato.

 **Livello 6 - " A "** corrisponde agli effetti di AMNESIA. In questa fase la coscienza è persa o, almeno, più tardi non si può più ricordare che cosa si è provato/vissuto. L' individuo può cadere, oppure rimane completamente immobile o va a sbattere tutt'intorno; può aversi un comportamento sonnambulico. Le ferite possono essere sostenute senza che si senta alcun dolore; al risveglio, l' individuo non avrà ricordo di quel che ha fatto, sperimentato, o detto nel Livello 6. Nessuno è in grado di ricordare che cosa sperimenta in questa condizione molto profonda di trance. Questo non è un livello desiderabile, perché in seguito dell' esperienza non viene ricordato niente.

I METODI DI USO

Salvia non è mai utilizzata tramite iniezione. Ci sono molti metodi differenti di uso. Diversi di questi saranno discussi qui.

I METODI TRADIZIONALI MAZATECHI : i due metodi tradizionali Mazatechi sono abbastanza inefficaci in quanto richiedono molte altre foglie in più che gli altri metodi. Ma sono molto sicuri. Le foglie sono prese tradizionalmente in una stanza semi-buia come parte d'una cerimonia di guarigione o religiosa. Almeno una persona sobria è presente per vigilare sulla gente che ha preso Salvia. Uno dei modi d'uso tradizionali Mazatechi per quest'erba è bere una bevanda a base d'acqua fatta con le foglie fresche appena raccolte . Richiede molte foglie e il gusto è in qualche modo sgradevole, pertanto questo metodo è usato raramente dai non-Mazatechi. Salvinorin è assorbito molto male dallo stomaco, in modo da richiedere enormi quantità di foglie per rendere efficace la bevanda. In ogni caso funziona e i viaggi con la bevanda durano più a lungo di qualunque altro metodo. Masticare e ingoiare tantissime foglie fresche è l' altro metodo dei Mazatechi. Quando viene fatto questo, le foglie sono sgranocchiate lentamente per circa una mezz'ora. Anche se le foglie sono masticate-e-ingoiate, la maggior parte dell' effetto si deve al salvinorin che viene assorbito attraverso la mucosa della bocca durante la masticazione. Questo è un modo meno efficiente di masticare Salvia che il metodo del quid (vedere sotto). La maggior parte della gente trova che masticare e ingoiare le foglie fresche sia amaro e sgradevole, e per qualcuno è causa di una specie di strozzamento in gola.

METODI MODERNI

IL METODO quid: Si fa una sfera -o un cilindro- di foglie arrotolate. Questa cosa è chiamata quid ("cicca"). Deve essere masticata. Le foglie sono masticate lentamente -- una masticazione ogni 10 secondi circa. Vanno mantenute sotto la lingua quando non sono masticate. Conservate nella bocca per mezz'ora il quid che state masticando, con tutto il succo che forma,. Se potete, tenetelo nella bocca senza sputare o ingoiare. Dopo averlo

masticato per questa mezz'ora, sputate tutto . Tenete a portata di mano una ciotola in cui sputare e un tovagliolo. Il succo di Salvia macchia la moquette ed altri tessuti, fate in modo che la ciotola non vi si capovolga sopra.

Tutti i quids possono essere fatti sia con foglie fresche che con foglie secche. Quelli fatti con foglie essiccate sono meno amari. Per fare un quid con foglie secche, pesate 2- 8 grammi di foglie essiccate. Una bilancia abbastanza esatta per questa operazione può essere comprata per meno di \$50. Se non avete la bilancia, contate 8 - 28 grosse foglie secche intere. Bisogna disporre le foglie in una piccola ciotola di acqua fredda per 10 minuti. Dopo che le foglie si sono bagnate e impregnate durante i 10 minuti, toglietele dall' acqua, premetele per eliminare da loro l' acqua eccedente e arrotolatele a forma di quid. Qualcuno, quando è di fretta, salta questo punto (la reidratazione), ma masticare le fragili foglie secche può essere sgradevole. Se desiderate potete addolcire il quid con zucchero, miele, estratto di Stevia o un dolcificante artificiale come Equal®. Ciò lo renderà meno amaro e più piacevole da masticare. Se utilizzate le foglie fresche anziché asciutte, avrete bisogno di 8 - 28 grandi foglie fresche. Verosimilmente l'effetto dei quids di Salvia può essere aumentato in primo luogo trattando la bocca in un modo speciale per aumentare la sua capacità di assorbire il salvinorin. Per fare questo avrete bisogno d'uno spazzolino da denti e d'un collutorio che contenga **alcool e mentolo** , ad es. Listerine® menta fredda, (o qualunque altra marca che contiene l' alcool ed il mentolo). Spazzolare delicatamente l'interno della bocca, compreso il tessuto sotto la lingua e la sua superficie superiore. Ciò rimuove gli strati di cellule morte normalmente presenti. Non spazzolare troppo forte per non causare un sanguinamento. Risciacquate con il collutorio per almeno 30 secondi. Siate sicuri di passare il collutorio dappertutto nella vostra bocca, incluso sotto la lingua. Poi sputate via il collutorio e risciacquate una volta con acqua. Sperimenterete pochissimo nei primi 12 - 15 minuti di masticazione; non lasciatevi fuorviare da questo. Gli effetti completi solitamente si ottengono entro 30 minuti (il tempo che vi serve per sputare via il quid). Rimangono a questo livello per circa 20 minuti ancora, quindi cominciano diminuire. Il viaggio intero dura raramente molto più d'un' ora e un quarto, ma questo varia.

FUMARE:

Le foglie secche possono essere fumate in una pipa. Devono essere fumate molto calde ed il fumo deve essere inalato profondamente e rapidamente per avere un effetto. Poiché il salvinorin richiede alte temperature per poter vaporizzare, è meglio tenere una fiamma immediatamente sopra le foglie, spingendola giù nelle foglie per tutto il tempo che inalate. Le foglie possono essere fumate in una pipa per tabacco a cannello corto, in un bong, o in una pipa " steamroller ". Riempite di foglie il fornello di una pipa di medio formato. Usate un accendino a gas butano che si spegne quando non lo premete più, e non i fiammiferi. Bisogna avere un grande portacenere o una ciotola a prova di capovolgimento dentro cui posare la pipa quando ritenete di aver fumato abbastanza. Ricordatevi che quando "viaggiate" potreste dimenticare che avete la pipa in mano. Potreste farla cadere, causandovi un' ustione o l'inizio di un incendio; è meglio, quindi, avere un sitter accanto quando si fuma. I primi effetti saranno osservati entro un minuto dall'inalazione. Dopo 5-6 minuti gli effetti cominceranno gradualmente a scendere. La durata totale del viaggio può essere di meno di 30 minuti o può durare anche fino a un' ora. Le foglie potenziate con gli estratti possono anche essere fumati. le foglie potenziate con gli estratti possono essere molto forti e dovrebbero essere fumate soltanto quando è presente una sitter. È possibile vaporizzare le foglie o l' estratto in un vaporizzatore speciale che riscalda il materiale senza bruciarlo. **La vaporizzazione può ingannare.** Poiché è prodotto pochissimo fumo, è possibile inalare una dose molto forte senza rendersene conto. Chiunque provi la

vaporizzazione assolutamente **DEVE** avere un sitter presente. Molti vaporizzatori commerciali fatti per la cannabis non funzioneranno per Salvia. I vaporizzatori speciali di Salvia possono essere costruiti facilmente, ma la vaporizzazione non è per i principianti con Salvia. La vaporizzazione di Salvinorin puro è ugualmente possibile. Non è assolutamente per i principianti! A meno che la dose sia misurata molto precisamente, questa è estremamente pericolosa, poiché è molto facile vaporizzare una dose troppo elevata. Per essere fatta in maniera sicura, la vaporizzazione di salvinorin richiede di pesare la dose su una bilancia chimica molto precisa capace di pesare il salvinorin in microgrammi (milionesimi di grammo o gamma).

Queste bilance analitiche costano ben oltre \$1000 (2 milioni di lire). Ma ora sono disponibili dosi standardizzate di Salvinorin su foglia; usando queste preparazioni è possibile inalare una deliberata dose di salvinorin pesata accuratamente, pertanto è possibile sperimentare con il salvinorin senza dover acquistare una bilancia analitica e i rischi di overdose sono enormemente ridotti.

Vi è ora in commercio una tintura di Salvia, venduta da Daniel Siebert con il nome di "Sage Goddess Emerald Essence®.". Questo estratto fluido di Salvia divinorum è stato concepito per essere tenuto in bocca fin quando il suo contenuto di salvinorin non è stato assorbito. Anche se si può prendere "puro" (non diluito), risulta piuttosto irritante per la bocca se lo si prende in questo modo. L'irritazione è dovuta al suo alto livello di contenuto alcolico. E' meglio prenderla diluita con acqua calda. La quantità di alcool presa -anche in una elevata dose di estratto- non è sufficiente per produrre una intossicazione alcolica. L'effetto della tintura è quello della Salvia, non quello del whisky. L'alcool è presente nella tintura solo come solvente. La tintura viene fornita con 2 contagocce, uno per la tintura e un altro da usare unicamente per l'acqua calda. Vi viene data con le istruzioni dettagliate sul suo uso e l'appropriato dosaggio. Un semplice metodo per usare l'estratto è versare la dose misurata in un bicchierino da liquori [o da saké- N.d.T.] e poi aggiungere un quantitativo d'acqua calda (alla temperatura del caffè dei bar) approssimativamente identico. Immediatamente dopo aver mescolato i due liquidi, sorseggiate il contenuto del bicchierino e tenetelo in bocca senza ingoiare. Tenete la lingua sollevata verso il palato in modo da consentire ai tessuti sublinguali di assorbire il salvinorin. Vale a dire tenere il liquido in bocca sino al raggiungimento del livello desiderato o lasciar passare mezz'ora. Quindi ingoiare o sputare, come preferite.

QUAL È IL METODO MIGLIORE?

Vi sono pro e contro per ogni metodo. Qualcuno asserisce che il quid dà "trip" più forti, più profondi, più visionari che con il fumo. Altri affermano che per loro masticare non funziona assolutamente, ma fumare sì. Quelli che raggiungono pochi effetti con entrambi i metodi, possono provare a combinarli: per primo mastica un quid e poi, dopo averlo sputato, accendi!

Se già usate sigarette o cannabis probabilmente preferirete fumare. Se non siete fumatori, preferirete probabilmente il metodo quid; ricordate che fumare qualsiasi cosa, anche la Salvia, può non essere salubre per i polmoni. Diversamente da quella fumata, la Salvia presa per via orale non danneggia i polmoni.

Un "trip" con il quid richiede più foglia asciutta che un "trip" di fumo. Se avete pochissima foglia disponibile, fumare può essere un metodo per "viaggiare" con quel poco che avete. I "trip" con quid salgono adagio ma durano più a lungo. Vanno meglio per esplorare il mondo della Salvia. Vanno meglio per la meditazione profonda.

Le tinture di Salvia (es. "Sage Goddess Emerald Essence®") hanno lo stesso effetto del quid, ma la dose si può definire meglio e gli effetti salgono un po' prima e tenere in bocca la tintura dal gusto non

sgradevole è più comodo che tenere in bocca le foglie da masticare. L'unico effetto collaterale riportato esclusivamente con l'uso della tintura è stata la "bruciatura" del rivestimento del tessuto orale. Questo avviene quando l'alcol nella tintura non è stato sufficientemente diluito. Può lasciare la bocca leggermente irritata nel giorno successivo all'esperienza, più o meno come succede quando si beve la minestra troppo calda. Per evitare il problema basta diluire la tintura con acqua calda a sufficienza. Finché non sapete bene quanto siete sensibili alla Salvia non fate esperimenti con estratti, Vaporizzatori, o SALVINORIN. Masticare quid, o fumare le foglie porterà in ogni caso molte persone al livello 5. Non c'è bisogno, perciò, di sperimentare metodi più forti e più pericolosi per prendere la Salvia. C'è qualcuno— sebbene siano una minoranza-- che anche dopo molti esperimenti, resta 'Salvia HARDHEAD' (testadura = refrattario). Non sperimenta mai più di un effetto lieve, sia fumando sia con il quid. Un certo numero di questi hardheads raggiungerà risultati soddisfacenti se, dopo aver masticato un quid, subito dopo proverà ad usare il fumo, dopo aver sputato la cicca. Altri troveranno inefficace anche questo. Per loro saranno necessarie le foglie rinforzate con estratti. Controllate innanzi tutto quanto siete sensibili, prima di arrischiare questi metodi più forti. Se voi avete una normale sensibilità alla Salvia, questi metodi estremi dovrebbero essere evitati. Con un po' di pratica, masticando quid, o fumando, o combinando i 2 ('BOOSTING'), andrà proprio bene per la maggior parte delle persone. Molta gente prova diverse volte la Salvia, prima di avere una vera esperienza sconvolgente ('BREAKTHROUGH'). Così non etichettatevi 'Salvia HARDHEAD' troppo presto.

SITTERS e SICUREZZA

QUANDO E' NECESSARIA UNA SITTER

Un/a SITTER è un obbligo se state prendendo dosi con le quali potreste uscire proprio fuori "di brutto" (eng.: *to FREAK out*), diventare confusi, ferirvi, cadere, mandare a fuoco la casa, o fare qualsiasi cosa che possa nuocere ad altri. Il/la SITTER presente è necessario/a se siete nuovi alla **Salvia**, se state sperimentando con formulati più forti di quanto non avete mai usato prima, o se state provando un modo più potente per prenderla. L'utente esperto di **Salvia** che sta masticando QUID, può scegliere sovente di fare da solo, e può essere proprio tranquillo e sicuro nel fare così. In ogni caso avere un/a gradevole, sensata, sobria SITTER è un dovere assoluto se state provando la vaporizzazione, se fumate l'estratto o le foglie arricchite, o se state usando SALVINORIN puro. Fumare foglie solitamente rientra in entrambi i termini di rischio. Usate il buon senso. Molta gente ha fatto lo stesso senza SITTER, ma avere una SITTER non è mai un'idea cattiva.

Cosa debbono conoscere e fare le SITTER

Il/la SITTER ha l'obbligo di ricordarsi che per quanto pazzescamente possa agire il *tripper* (il "viaggiatore"- chi prende una sostanza psichedelica/enteogena), il viaggio con la **Salvia** dura poco. Non portate il *tripper* al pronto soccorso (a meno che, chiaramente, non vi sia una vera emergenza medica). Conservatelo al sicuro e attendete la fine del "viaggio". Se voi non lo potete conservare al sicuro cercate un aiuto. Altrimenti tenete privata la faccenda. In circa un'ora (solitamente molto meno) il *tripper* torna ad essere normale. E' molto rassicurante tenere a mente questa cognizione quando le cose si incasinano un po'. E' d'aiuto avere fatto la **Salvia** voi stessi prima di fare del "BABY-SITTING" per un'altra persona. L'esperienza con altri Psichedelici può essere utile soltanto parzialmente. I SITTER debbono sapere che la **Salvia** è differente da queste sostanze. Toccare (per

calmare- per fare ritornare "a terra") 'to ground' il *tripper* funziona per qualche viaggiatore che sta sperimentando enteogeni come l'LSD, ma può essere molto penoso per qualcuno in **Salvia**. Se voi progettate di toccarlo , chiaritelo bene col *tripper* **prima** che il "trip" inizi.

I ruoli del SITTER

Il SITTER ha 3 compiti.

L'impiego principale è mantenere al sicuro il *tripper* e tutte le persone che possono essere presenti all'esperienza. Questo viene prima di tutto il resto. Il pericolo maggiore è ferirsi accidentalmente. I pericoli principali sono FISICI, non emotivi. Il vostro compito è di essere come gentili 'guardiani'. State in secondo piano il più possibile, ma rimanete all'erta nel caso il *tripper* iniziasse improvvisamente a muoversi incontrollatamente. Non utilizzate la forza fisica, sempre che nient'altro si possa fare. L'utilizzo della forza fisica può essere nociva sia al *tripper* che a voi stessi. Può essere interpretata come un assalto. Non lasciate mai che **Salvia** sia usata se sono presenti delle armi da fuoco, dei coltelli o altri oggetti pericolosi. Prendete le chiavi dell'automobile al *tripper* per conservarle al sicuro prima che inizi il "trip". Tenete il *tripper* al riparo dalle cadute, dai colpi accidentali alla testa, dagli oggetti appuntiti, dal camminare sui muri, dall'andare in giro per strada o in altre aree pubbliche, dalle fiamme, dalle superfici bollenti e dagli oggetti fragili ; ma lasciate che il *tripper* sia libero di muoversi a suo piacimento in un'area sicura. Non afferratelo né provate a costringerlo/la fisicamente salvo che non sia assolutamente necessario. Orientatelo di nuovo. Parlate dolcemente. Togliete gentilmente da mezzo gli oggetti pericolosi. Usate soltanto il minimo contatto fisico necessario (il *tripper* confuso (donna o uomo) può pensare che il tuo tocco sia un assalto o un tentativo di stupro e reagire al pericolo immaginato). Voi dovere impedire improvvise intrusioni d'estranei ed altre goffe situazioni sociali.

Il secondo impiego del SITTER è quello di assicurare. Sovente, semplici chiarimenti ripetuti possono aiutare il *tripper* impaurito, p.e.. " sei al sicuro, non lascerò che niente ti possa nuocere." - " stai solo avendo un brutto "trip", ti sentirai meglio in pochi minuti." - " il tuo nome è.....". Sono il tuo amico....." . Se il discorso non è avviato dal "viaggiatore", restate in silenzio. Il silenzio è sovente meno penoso al confuso *tripper* che provare a decifrare cosa sta dicendo il SITTER

Il terzo impiego del SITTER è (di) aiutare il *tripper* - più tardi- a richiamare alla mente il "trip". Vi sono diversi modi. Usate un NOTEBOOK (taccuino) e registrate tutti gli strani movimenti e discorsi del *tripper*. Più tardi, voi potrete chiedere informazioni riguardo a questi avvenimenti. Ciò può aiutare a richiamare la sua memoria su cosa stava provando. Un'altra tecnica, se il *tripper* non è andato troppo "lontano" per poter conversare con lui durante il "trip", è chiedere ripetutamente " cosa stai provando adesso?". Le agende, o il registratore, possono essere usati per registrare le risposte. Qualche *tripper* preferirà che restiate in silenzio e non registriate, chiaritevi sempre con lui anticipatamente.

Fondamenti di comune buon senso

 Non utilizzate mai la Salvia se sono presenti armi da fuoco. Non usate mai Salvia quando i coltelli sono accessibili facilmente.

 Non guidate mai quando prendete la Salvia.

 Scegliete con cura il tempo e il luogo del "trip". L'intimità e l'incolumità sono essenziali. Sii molto guardingo riguardo alle altezze e le fiamme libere come le candele. Non prendete Salvia quando potreste essere interrotti da telefonate, visite, animali domestici, dai bambini eccetera .Spegnete il telefono (anche il cellulare), e regolate la

segreteria telefonica perché registri silenziosamente le chiamate in arrivo. Potrete rispondere alle chiamate un paio di ore più tardi, quando sarete sobri.

 Pensate a quanto prendete, e come lo prendete.

 Dopo che tutto il materiale fumato è messo al sicuro, distendetevi sul letto, su un divano o sul tappeto. Sarete molto più sicuri sdraiati che andando in giro inciampando tutt'intorno. State sdraiati per il resto del "trip". Potete viaggiare meglio con gli occhi chiusi.

 Abbiate vicino un/a SITTER (questo è specialmente importante se siete nuovi alla Salvia, prendendo una dose alta, fumando l'estratto o usando un sistema di assunzione molto forte come la vaporizzazione).

 Fate da SITTER volontariamente per altri.

 Se avete problemi di salute mentale, non prendete Salvia senza prima discuterne col terapeuta, o dottore.

 Perseguite ed incoraggiate l'utilizzo responsabile. Non date Salvia a minori, o a gente violenta o instabile. Non datela ad estranei. Sappiate a chi la state dando e perché costoro vogliono usarla.. Perché andarsi a cercare dei guai?

 Non prendete mai Salvia mentre siete al lavoro o in pubblico. Conservatela privata. Non è per i concerti. Non è per le feste affollate e rumorose. Non è per i raves. Meglio usarla in un ambiente tranquillo e privato, in compagnia di solo qualche caro amico.

 Mischiare Salvia con altre sostanze o con grosse quantità di alcol può scatenare un comportamento incontrollabile, oppure viaggi terrificanti. Mentre gli utenti esperti provano diverse combinazioni con la Salvia, queste non sono adatte per i principianti, ed è certamente più rischioso che usarla da sola. Anche se non ci sono interazioni tossiche conosciute (del tipo "sostanza+sostanza") tra Salvia e qualcosa d'altro, questo non è stato ancora studiato scientificamente.

 Siate guardinghi il più possibile riguardo alle fiamme - le candele, gli accendini, il fuoco eccetera quando usate Salvia.

 Siate molto attenti riguardo agli estratti, l'uso di vaporizzatori, le foglie vaporizzate, o fumando estratti di foglie arricchite. Questi necessitano che siano presenti SITTER. Masticando QUID o fumando le foglie è molto meno facile andare fuori controllo .

 Non utilizzate mai puro SALVINORIN, sempre che la dose non sia stata pesata con bilance ULTRA accurate (c'è bisogno di pesare dosi in microgrammi e di conoscere esattamente come potete prenderlo con la massima sicurezza. Se anche avrete soddisfatto questi requisiti, dovrete SEMPRE avere una SITTER vicino).

La pianta e la sua cura

Se pensate di far crescere una pianta di **Salvia**, dovrete leggere questo capitolo. Se preferite ricorrere all'acquisto di foglie essiccate, potete saltare questa sezione.

Salvia divinorum è una pianta semi-tropicale perenne. Questo significa che può ricrescere un anno dopo l'altro, ma solo se non è esposta a temperature inferiori al suo punto di congelamento. È una grande pianta verde con grosse foglie fitte e un fusto verde squadrato e cavo che la contraddistingue. Può crescere in altezza anche per diversi metri, se le condizioni sono favorevoli. Quando raggiunge una taglia sufficiente, le ramificazioni si chinano, o si spezzano, e possono radicare se vengono a contatto con la terra umida. Benché **Salvia** divinorum possa fiorire in condizioni d'illuminazione naturale, non produce quasi mai semi fertili. Così la pianta è propagata per talea. Le foglie sono ovali, leggermente dentate (serrate) e possono diventare proprio grosse (oltre 9 pollici [23 cm.] di lunghezza). Sono sovente color verde smeraldo ma possono anche essere verde - giallo o addirittura gialle. Spesso sono coperte da una patina di peli molto corti, che danno loro un'apparenza satinata e vellutata in certe condizioni di luce.

Le piante sono amanti dell'acqua, ma crescono meglio in parziale ombra, in un suolo ben irrigato ma anche ben drenato. E' necessario che le radici non siano inzuppate d'acqua . altrimenti finirebbero per marcire con conseguente morte della pianta.

Salvia divinorum può essere cresciuta INDOOR (all'interno) in qualsiasi clima. E' una bella pianta da appartamento.

Potete crescere **Salvia** divinorum tutto l'anno all'aperto se vivete in un clima umido semi-tropicale, con il terreno ben scolato ma ben irrigato, un suolo piuttosto Acido, con un alto contenuto di HUMUS. Se voi vivete in un clima più freddo o più arido, potrete ugualmente crescere **Salvia** all'aperto, tempo permettendo. Ma dovrete apprestare loro un po' di cure, sincerarvi che siano protette dalla brina, irrigarle frequentemente e nebulizzarle quando l'umidità è bassa. **Salvia** non sopravvivrà al gelo o alla siccità. Può essere allevata all'aperto in vasi che poi possono essere portati all'interno quando fa freddo (sotto 40 gradi Fahrenheit [4-5°C]). In questo modo possono crescere all'aperto in estate e dentro l'inverno.

Salvia vi segnalerà quando sta diventando troppo asciutta - le sue foglie cadranno. State attenti ad irrigarle alla prima manifestazione di leggera perdita di foglie, non lasciate che la pianta diventi irrimediabilmente appassita. Il terreno in cui cresce dovrà essere ben drenato, ma apparire umido. Se piantate la Salvia nei vasi, assicuratevi che il vaso sia grande, più è grande, meglio è. Raddoppiare il diametro del vaso può incrementare la produzione di foglie più di 4 volte. Anche se la tua disponibilità di spazio potrà eventualmente limitare la dimensione del vaso, usa il contenitore più grande possibile. Deve avere un foro di scolo. Collocare della ghiaia (o pezzi di polistirolo sbriciolato) nel fondo del vaso aiuterà lo scolo dell'acqua in eccesso e scoraggerà la marcescenza della radice. I terricci per le invasature che si trovano in commercio vanno bene. Aggiungere Vermiculite® o Perlite® al terriccio per invasature è utile ma non obbligatorio.

Salvia ha bisogno di concime. Non c'è un concime nettamente migliore di un altro.

Risultati soddisfacenti possono essere conseguiti con prodotti differenti. Un po' di questi sono:

SCOTTS ALL- PURPOSE - alimento per pianta (18-13-13) distribuito leggermente sul suolo ogni 6 settimane circa.

MIRACID - aggiunto all'acqua una volta la settimana(1/4 TSP. PER GALLON)

PETERS - alimento del professionista per piante - solubile (15-30-15) 1/4 TSP. A GALLON d'acqua a settimana.

Meno raccomandati sono:

L'emulsione di pesci - [farine di pesce] (è adatto solo per l'utilizzo esterno, perché ha un odore molto cattivo)

Concimi d'ossa - [cornungia ecc.] (gli animali possono scavare attorno alla pianta di **Salvia** per cibarsi dei residui, se usate questo concime!)

Se le crescete in ambiente protetto (dentro), portate le piante fuori quando il clima è abbastanza tiepido e lasciate che la pioggia le bagni. Questo impedirà che nel suolo si accumulino sali che potrebbero uccidere la pianta.

Salvia divinorum può crescere bene in varie condizioni d'illuminazione. **Cresce meglio con poche ore di luce solare parziale al giorno.** Può crescere bene INDOORS accanto ad una finestra. Si può lasciare di più al sole se le mantenete bene innaffiate e frequentemente nebulizzate. Può anche tollerare moderatamente l'ombra. **Quando cambiate le condizioni d'illuminazione o di umidità le piante diventano più sensibili, così fatelo gradatamente. Quando le viene dato sufficiente tempo, Salvia è molto adattabile, ma può richiedere settimane per assuefarsi ad un nuovo ambiente.**

Molti insetti rompiscatole possono aggredire **Salvia**. La "mosca bianca" [*Lirhyomiza spp.*] (è un grande problema per la crescita della pianta in serra. Afidi, lumache, bruchi, tripidi, ragno rosso, ed insetti simili possono anche danneggiare le piante. Marciumi alla radice e al fusto possono essere degli altri problemi. Chiazze fungine possono apparire sulle foglie. Non si sa che virus assalga la pianta di **Salvia** divinorum, ma probabilmente qualcuno lo fa, giacché aggredisce le altre salvie.

Afidi ed altri insetti possono essere asportati con un batuffolo di cotone immerso in alcool isopropilico (sfregando).

Il danno delle limacce può essere ridotto allevando **Salvia** in vasi rialzati dal terreno o su strutture di legno tipo "pallet". Qualcuna potrà ancora prendere d'assalto le piante. Tenete d'occhio questi viscidì rompiscatole. Le limacce possono mangiare una tremenda quantità di **Salvia**! La birra può essere usata per attirarle e affogarle. Mettete un piattino di birra in una lieve depressione del suolo; la superficie del piattino dovrebbe essere a livello del terreno, così le lumache possono entrarvi, bere ed affogare.

Il ragno rosso può essere controllato dissolvendo sapone di Marsiglia nell'acqua e spruzzando le foglie, inclusa la loro pagina inferiore. Ripetete ad intervalli di 2 settimane per 3 applicazioni. Attenzione: ci sono state alcune denunce di foglie danneggiate dal sapone, così non utilizzatelo troppo. Usando un annaffiatoio all'esterno, o uno spruzzatore all'interno, spruzzando le foglie sopra e sotto, può essere più efficace nel controllare il ragno rosso. L'annaffiatoio da giardino è il tuo miglior amico per combattere la maggior parte dei rompiscatole esterni. Spruzzate le foglie con sufficiente pressione da soffiare via i rompiscatole, ma non troppo forte da danneggiarle. Non dimenticate di spruzzarne anche il lato inferiore delle foglie.

Salvia divinorum è propagata per talea, **non da seme**. Queste possono essere radicate sia in acqua sia direttamente nel suolo. Ecco come fare:

Radicazione in acqua:

Recidi un getto (lungo da 4 a 8 pollici) [da 10 a 20 cm.] che porti alcune foglie. Collocalo subito in un piccolo bicchiere con circa 1.5 pollici d'acqua [3.5/4 cm.] Una sola talea deve essere messa in ogni bicchiere, così se in una si sviluppa del marciume, quest'ultimo non può diffondersi ad un'altra. È meglio se la talea è tagliata subito immediatamente sotto ad un nodo, essendo questi i luoghi dai quali nuove radici sono più suscettibili di sviluppare. Mentre non è necessario praticare proprio qui il taglio che stacca la talea dalla pianta madre, preparando successivamente la talea tagliata subito sotto il nodo, ci consente il vantaggio di non lasciare del "materiale fusto" ciondolante nell'acqua sotto il nodo. Questo è importante perché un pezzo di fusto è più predisposto al marciume che un nodo. Assicuratevi che la talea sia tagliata con forbici, o un coltello, puliti così il fusto tagliato non sarà aggredito da germi

e funghi che potrebbero causare marciume. Recidi tutte le foglie grosse, ma lascia un po' di foglie piccole. Colloca un grande bicchiere o un barattolo chiaro (o una borsa di plastica trasparente) sottosopra sulla pianta con la funzione di "tenda umida". Collocalo dove possa ricevere luce solare. Cambia l'acqua giornalmente. Può essere una buona idea utilizzare acqua bollita raffreddata. Se la tua acqua è trattata con cloro, bollendola questo si disperderà. L'acqua senza cloro può essere contaminata dai germi patogeni, ma bollendola questi si possono ammazzare. Radicare nell'acqua funziona circa 3 volte su 4 (talvolta il fusto marcisce e la talea soccombe). In 2 settimane, le radici iniziano a svilupparsi. Quando sono lunghe circa 1/2 o 1 pollice (da 1.2 a 2.5 cm.), trapiantale in terriccio per rinvasature, dentro un vaso ben drenato. Continua a coprire con un grande bicchiere o un barattolo chiaro (o una borsa di plastica trasparente) finché la pianta non appare energica. Allora gradualmente libera la pianta dalla dipendenza della tenda

Radicazione direttamente nel suolo:

Salvia può essere radicata direttamente nel suolo.

MATERIALI di cui hai bisogno:

-  il terriccio di radicazione.
-  2 tazze di plastica usa-e-getta.
-  un po' di polvere ROOTONE (questa è una miscela d'ormoni radicanti che contiene anche del Fungicida), disponibile presso qualsiasi vivaista.
-  1 sacco sottile e trasparente di Polietilene, della capacità di un Gallone (litri 3.7 U.S.A. o 4.5 litri GB), per conservare l'umidità.
-  un elastico robusto.
-  acqua.

Il metodo:

Pratica qualche piccolo foro di drenaggio in una delle coppe. Riempi la coppa per 2/3 con il terriccio di radicazione. Usando un lapis o un dito fai un buco, profondo circa 2 pollici (5 cm.) nel suolo. Il terriccio adesso è pronto per ricevere la tua talea. Ora devi prepararla. Con le forbici pulite recidi una porzione di fusto da una pianta sana. Lascia poche foglie (piccole) sulla cima. Conserva per l'uso enteogeno le foglie più grosse tagliate dal fusto. Subito dopo aver sfrondata lo stelo, colloca nell'acqua pulita. Ora taglialo proprio sotto un nodo, è da lì che le radici si sviluppano. Conserva umida la superficie tagliata. Poni nella polvere radicante, per circa 1 pollice (2.5 cm.) di altezza sopra il nodo, la parte con la base tagliata e il fusto liberato dalle foglie. Agita bene per eliminare l'eccesso d'ormone. La polvere per radicare è piuttosto tossica, così lavati le mani dopo averla maneggiata. Colloca la talea impolverata nella buca fatta nel suolo. Pressa delicatamente il suolo attorno alla talea, tenendola ferma mentre riempi la buca. Innaffia la talea piantata finché alcuni fiotti d'acqua non fuoriescono dai buchi di scolo. Colloca la coppa con la pianta nella seconda tazza di plastica (che serve appunto per recuperare qualsiasi eccesso d'acqua). Potete mettere un piccolo pezzo di legno o di plastica nel fondo della coppa esterna per distanziare le due coppe. Questo lascia spazio sufficiente per lo scolo dell'acqua in eccesso. Colloca la borsa di plastica chiara da 1 gallone sulla talea in radicazione, usando un elastico per tenerlo a posto. L'elastico deve essere fuori del sacco di plastica e il sacco fuori delle 2 coppe. L'elastico tiene la borsa ben serrata contro le coppe. Siccome la plastica conserva l'umidità, non è necessario irrigare troppo frequentemente. Dopo diverse settimane voi potete trapiantare le piante ormai radicate in un vaso più grosso.

La trasformazione dei prodotti della pianta

Le foglie asciugate di **Salvia** divinorum possono essere immagazzinate in barattoli sigillati, lontano dalla luce. Immagazzinate in questo modo, le foglie possono probabilmente conservare la loro potenza per molti anni, forse indefinitamente (nessuno sa per quanto). Se voi state crescendo la vostra pianta, probabilmente vorrete asciugare le foglie per un utilizzo futuro. Ci sono diversi modi per far questo.

metodo 1.) la generosità della natura

Attendi finché le foglie non cadono da sole o muoiono. Coglile. Collocale su una lastra in una camera con bassa umidità. Girale sovente. Attendi finché sono asciutte, allora immagazzinale. Non è ancora conosciuto se le foglie cadute naturalmente siano più forti o più deboli delle foglie raccolte.

Il vantaggio: non priverete le piante di foglie di cui hanno bisogno.

Lo svantaggio: dovrete attendere che la pianta sia pronta a fare dono alla vostra causa. Le foglie possono non essere in condizione perfetta.

metodo 2) il tabacco di SALVIA

Prendete le foglie grandi, appena raccolte e mettetene una sull'altra (come accatastando una risma di carta). Tagliate poi attraverso la pila facendo strisce di 1/2 cm. (1/4 pollice). Accatastate queste in un cumulo su un ripiano. Giratele un paio di volte il giorno finché sono asciutte ma non "croccanti".

Il vantaggio: il 'tabacco' risultante dovrebbe dare un fumo più dolce delle foglie completamente asciugate.

Lo svantaggio: è possibile che questo metodo d'essiccazione lenta e parziale dia foglie più deboli e impossibili da conservare tanto a lungo quanto le foglie completamente asciugate ("croccanti").

metodo 3) Deidratatori d'alimenti

Asciugate le foglie in un deidratatore d'alimenti. Questi sono disponibili nei negozi di articoli per la casa. Secca le foglie completamente e molto velocemente. Asciugate finché le foglie intere, inclusi i fusticini di ogni foglia, diventano croccanti. Toccate le foglie con le dita per vedere se sono completamente asciutte. Se lo sono, i fusti delle foglie dovrebbero spezzarsi appena sono leggermente pressate.

Il vantaggio: velocità, asciugamento completo e convenienza.

Lo svantaggio: il costo del deidratatore.

metodo 4). SALVIA asciugata al forno

Collocatela su un piatto per forno (pirofilo). Non portate mai la temperatura oltre i 150 gradi F (circa 48°C).

Il vantaggio: velocità, asciugamento completo e convenienza.

Lo svantaggio: un po' meno conveniente che usando un deidratatore per alimenti. Può essere difficile conservare la temperatura del forno nella gamma ottimale.

metodo 5). essiccazione con Clorite di Calcio

La Clorite di Calcio è disponibile, come ricambio di sistemi anti-umido, presso la maggior parte dei magazzini di ferramenta (o nei negozi di colori e altro materiale per dipingere). Collocate una sufficiente quantità di Clorite di Calcio sul fondo di un contenitore in polietilene. Collocate un pezzo di

stagnola sopra il CaCl_2 , e mettete le foglie ad asciugare sulla cima del foglio. Piegando i bordi del foglio, eviterete che la **Salvia** venga a contatto con il CaCl_2 . Chiudete bene il contenitore. Le foglie dovrebbero essere pronte in circa 2 giorni.

Il vantaggio: *essiccazione completa.*

Lo svantaggio: *meno conveniente degli altri metodi. Lento.*

Comunque voi asciughiate le foglie, poi mettetele via in barattolo impermeabile alla luce. Un vaso di vetro pulito va molto bene (contenitori in vetro MASON da 1 QUART). Immagazzinando il vaso in un cassetto in cucina o nell'armadietto dei medicinali lo conserverà lontano dalla luce. Immagazzinate in questo modo, le foglie conservano la loro potenza per molti mesi, o addirittura anni.

Per finire

Dopo aver letto tutto questo, ormai conoscete la Pianta a sufficienza per potervi avviare sul verde sentiero di **Salvia**.

Vi auguriamo che possiate sempre trovare un cammino che abbia un CUORE. Che questa notevole Pianta- Maestra

vi possa guidare verso una maggior conoscenza di voi stessi, verso l'armonia, la meraviglia e la gioia.



How to achieve effects from smoked *Salvia divinorum*

(This site is created and maintained by [Daniel Siebert](#))

Many people find it difficult to achieve a satisfactory level of effects from the leaf in its natural state.

Here's why: The active principal of *Salvia divinorum* is a diterpenoid compound called salvinorin-A. The average concentration of salvinorin-A in *Salvia divinorum* leaves is 2.5 mg per gram. A moderate smoked dose of salvinorin-A for a person of average sensitivity is 0.5 mg. Therefore, in theory 200 mg (1/5 gram) of *Salvia divinorum* leaves contains enough salvinorin-A to produce moderate effects. In practice however, one should assume about twice this dose (i.e. 400 mg, or 2/5 gram), because some salvinorin-A is probably decomposed during burning, some is lost in smoke that escapes during smoking, and some is not fully absorbed in the lungs and is thus lost upon exhaling.

400 mg. of *Salvia divinorum* leaves produces a fair amount of smoke, and it takes several large lungfulls to inhale it all. Because salvinorin-A is rapidly metabolized in the body, it is essential that the full dose be ingested within a 2 - 3 minute period. It is also essential that the smoke is absorbed as efficiently as possible, otherwise much of it will be wasted. People vary in their ability to inhale and retain large amounts of smoke. Some people have no trouble achieving strong effects smoking ordinary leaves; others find it very difficult.

The potency of *Salvia divinorum* leaves is somewhat variable. So far, no one has identified the specific environmental factors responsible for this. Obviously, it is easier to achieve effects when using leaves of higher potency.

People vary in their sensitivity to salvinorin-A. Some people are highly sensitive and have no difficulty achieving a profound level of effects; others are extremely insensitive and require a dose 2 - 3 times higher than average.

ADVICE:

- (1) Use a water-cooled smoking device (a water pipe, or bong). This makes it much easier to inhale large quantities of smoke. Because the smoke is cooled, it can be inhaled more comfortably without coughing.
- (2) Try to inhale the full dose in three lungfulls. Each one should be inhaled slowly and deeply, then held for 20 - 30 seconds before exhaling. It is very important to retain each inhalation of smoke deeply in the lungs long enough for it to be absorbed efficiently. Do not pause between lung fulls (except for a short breath of fresh air if necessary). This insures that the whole dose will be consumed within the 2 - 3 minute period required. If the dose is smoked too slowly, it will be metabolized faster than it is ingested.
- (3) Use a 'micro-torch' type lighter. Many people report better results when using this type of lighter. These produce a very hot torch-like flame that causes rapid combustion of the smoking material and hence produces more concentrated smoke. Because of the extra heat generated by these devices, it is important to use them in conjunction with a water-cooled smoking device.
- (4) Use extract enhanced leaves (fortified leaves). These products are concentrated, so that the entire dose can be more easily consumed. Some of these products are so refined and concentrated that a full dose produces no more than a tiny wisp of smoke. These products also have a health advantage, since they reduce the amount of smoke that must be ingested to achieve the desired level of effects. One must keep in mind however, that fortified leaves must be used more carefully because of their greater potency. These products do not need to be smoked in a water-cooled pipe. You can make crude extract enhanced leaves (5x, 6x, etc.) yourself quite easily. Instructions are available in section XIII of the *Salvia divinorum* FAQ at: <http://sagewisdom.org/faq.html>. Similar products are available commercially. You may also want to consider one of my standardized salvinorin-A enhanced leaf products, which are available at: <http://sagewisdom.org/salviashop.html>.

What's New in the World of *Salvia divinorum*

(This page was last updated on August 28, 2000)

The *Salvia divinorum* Research and Information Center

is created and maintained by
Daniel Siebert

Resources:

 The Sage Wisdom *Salvia* Shop. Top quality *Salvia divinorum* leaves, rare clones, extracts, books, and related products can now be purchased directly from Daniel Siebert. The proceeds of all sales directly support important and much needed *Salvia divinorum* related research, scientific expeditions, and educational publications, such as those found on my *Salvia divinorum* web site: <http://sagewisdom.org>.

 Sage Goddess Emerald Essence. This is a specially formulated extract of *Salvia divinorum* designed for sublingual absorption. This product has taken years to develop. It is the most effective form of *Salvia divinorum* available for oral ingestion. Many people have been requesting such a product and now it is finally available.

The popular press:

 *Salvia divinorum* has received quite a bit of publicity recently. Following are links to all of the recent articles that I know about. If you know of other recent articles about *Salvia divinorum*, please let me know about them.

The New York Times. July 9, 2001 edition.

"New Cautions Over a Plant With a Buzz." Richard Lezin Jones. New York, USA.

The Times. July 10, 2001 edition.

"New Hip Drug is Legal in America." Anonymous. London, U.K.

The Sydney Morning Herald. July 10, 2001 edition.

"Little-Known Hallucinogenic Herb a Growing Concern." Anonymous. Sydney, Australia.

Corriere della Sera. July 10, 2001 edition.

"New York, in erboristeria l'allucinogeno legale." Anonymous. Milan, Italy.

Independent. July 11, 2001 edition.

"Hallucinogenic Sage Sells for \$120 an Ounce to New Yorkers with a Recipe for a Good Time." Andrew Buncombe. London, U.K.

The Sunday Times. July 15th, 2001 edition.

"Drug Suppliers use Loophole to Sell 'Magic Mint.'" Adam Nathan. London.

Die Zeit. July 18, 2001 edition.

"High: New York im Drogenhimmel." Von Orson Willis. Hamburg, Germany.

The New Zealand Herald. July 19, 2001 edition.

"Mexican Mind Bender Like a Legal LSD, Say Users." Bridget Carter. Auckland, New Zealand.

Der Spiegel. July 23, 2001 edition.

"Azteken-Drogen erobern die Welt." Anonymous. Hamburg, Germany.

The Los Angeles Times. August 14, 2001 edition.

"A Legal Hallucinogen, at Least for Now." Anne-Marie O'Connor. Los Angeles, USA.

The Press-Enterprise. August 28, 2001 edition.

"Potent Herb No Longer a Secret: SALVIA DIVINORUM: A Business Owner Plans to Sell the Hallucinogenic Plant at Her Inland Shops."

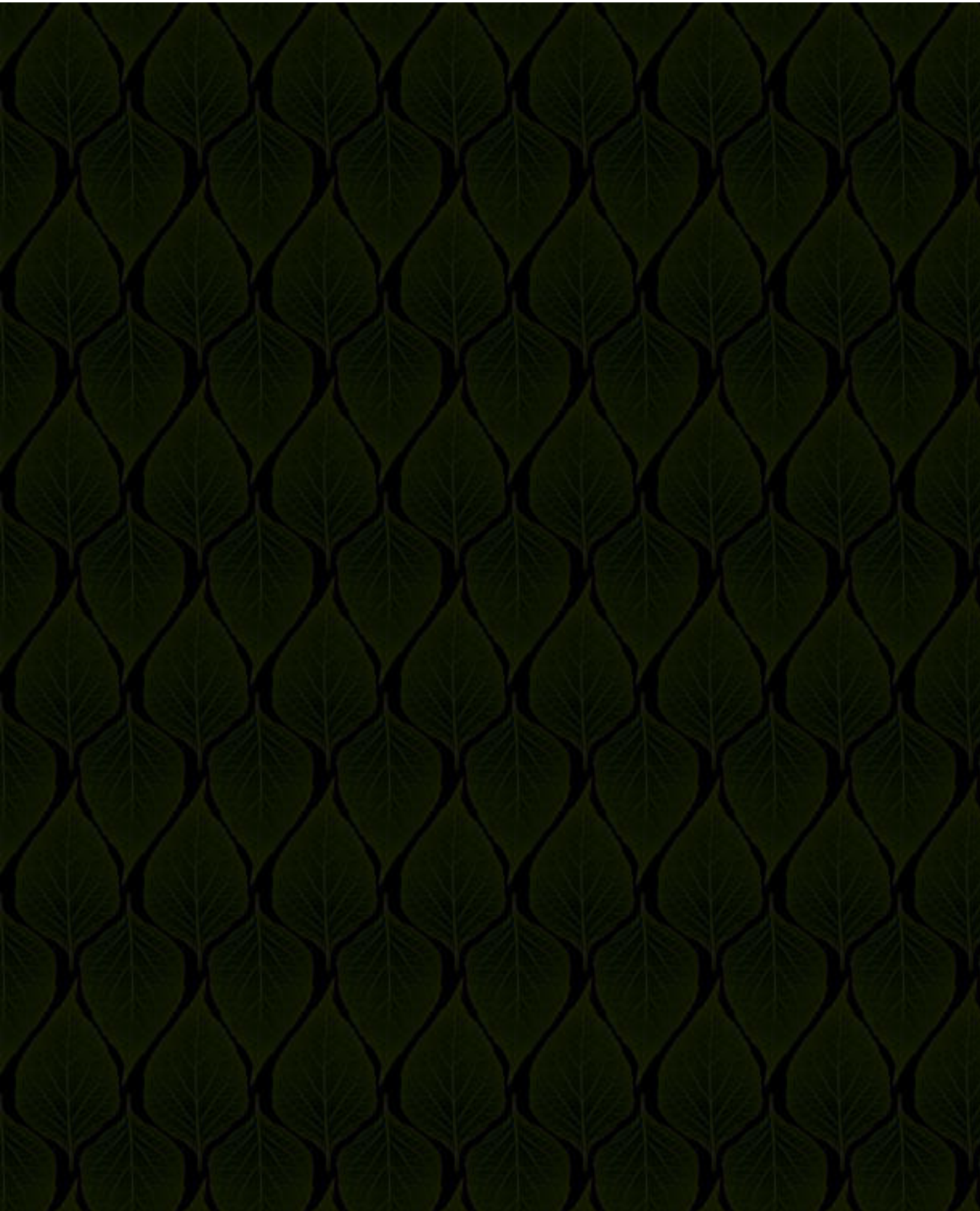
George Watson. Riverside, USA.

Recent and forthcoming publications:

- 📖 ["Divine Sage"](#) Daniel Siebert's big book of *Salvia divinorum*. A work in progress. Expected in early 2002.
- 📖 ["The *Salvia divinorum* Grower's Guide"](#). A unique horticultural guide to *Salvia divinorum*.
- 📖 ["*Salvia divinorum* and Salvinorin A: \(2nd edition\) The Best of the Entheogen Review 1992-2000"](#). The newly enlarged second edition is now available. A veritable treasure-trove of useful information about *Salvia divinorum*. This book belongs in every salvia enthusiasts collection.
- 📖 [The *Salvia divinorum* FAQ version 1.7!](#) Recently updated with many new additions!
- 📖 [The *Salvia divinorum* User's Guide has recently been updated.](#)

Science news:

- 📖 The structure of a novel compound isolated from *Salvia divinorum*--tentatively named "divinorin C"--is described by L.J. Valdés III in [lab notes](#) that he has graciously shared with *The Salvia divinorum Research and Information Center*.
- 📖 I am working with a group in Canada on a double-blind study to test the effectiveness of low dose, sublingually absorbed *Salvia divinorum* as an aid to meditation. This study will be partly funded by MAPS and the results will be published in the MAPS newsletter.
- 📖 The *Salvia splendens* double-blind study is complete. The results are reported in an interview that I gave for the Entheogen Review. See: [Daniel Siebert Speaks...](#) *The Entheogen Review*. 1999 V. 8, No. 3. Interviewed by Will Beifuss.



(This site is created and maintained by [Daniel Siebert](#))

How to propagate and grow Salvia divinorum

Propagating Salvia divinorum from seed.

Seeds should be stored in a sealed dry container. Their viability can be extended considerably if they are refrigerated.

The seeds should be planted 2-3 mm (0.08-0.1 inch) deep in a good quality potting mix. So as not to dislodge the seeds, which are tiny and close to the surface, the soil should either be watered from the bottom, or watered using a fine mister. The soil surface should be kept moist, but not soggy. If the seeds are viable, most will germinate in two to four weeks. Salvia divinorum seedlings are rather delicate and slow-growing at first. They must be nursed along patiently. Eventually as the plants grow larger, they will become stronger and more resilient.

Since Salvia divinorum is usually propagated from cuttings, most plants in cultivation are genetically identical clones derived from just a few introductions—primarily the "Wasson/Hoffman" clone. When you start new plants from seed you are establishing new, genetically unique individuals and thus doing important work to help expand the genetic diversity of this rare species. Should you obtain plants from seed, please maintain them very carefully. By propagated and sharing new strains with others, you help insure their future survival because you are making sure that their continued existence does not depend on a single individual. Please be careful to label your seed-raised plants so that they do not get confused with other strains in your collection. Most Salvia divinorum plants are indistinguishable from each other, but occasionally a seed-raised plant will be visibly distinctive in some way. If you do obtain an unusual plant, please contact me at: dsiebert@gte.net

Propagating Salvia divinorum from cuttings.

Salvia divinorum is a relatively easy plant to propagate from cuttings. Small cuttings will usually root within two or three weeks. Cuttings seem to root best when they are between two and eight inches long. They should be cut off of the mother plant using sharp, clean shears. The cut should be made just below a node.

To root the cuttings in water: Put each cutting into a glass of water. Each glass should be filled about 4 -5 cm (1 1/2 - 2") deep. It is a good idea to use a separate glass for each cutting so that if one starts to rot it doesn't spoil the water and kill the others. Leave the glasses indoors in diffuse light and add a little water

as necessary to maintain the water level. In about two weeks you should see some roots starting to form. Some cuttings may root more quickly than others. I find that they root just fine in plain water and no rooting hormones are necessary.

When the cuttings have several roots 1 - 2 cm (1/4 - 3/4") long, they should be planted in pots of loose potting soil and watered well so that the soil is completely moist. Keep them indoors for another two or three weeks so that they can establish a good root system in the pots with out having to deal with the wind and big temperature swings of the outdoors. You will need to keep the plants in a moist environment for a few days after moving them from the water to the pots to keep them from wilting. The easiest thing to do is to just cover the whole plant with a large upside down jar or use a big plastic bag with a wire cage support to keep it from collapsing on the plant. Spraying them with a fine mist occasionally is also a good idea. Don't wait too long to move the cuttings from the water to soil. If you do the roots will be more prone to damage and the cuttings will begin to starve for nutrients.

General care

You should begin fertilizing newly rooted cuttings about a month after they have been transplanted to soil. Seed-raised plants can be fertilized once they reach a height of 5 cm (2 inches). Begin with a half-strength fertilizer solution for the first few applications, then use full-strength solutions according to the manufacturer's suggestions. Just about any general purpose fertilizer will work fine but be careful not to over feed them. They respond well to regular feeding but they are sensitive to excess fertilizer and will put out deformed growth if over fed.

The plants appreciate a lot of room for their roots so they should be re-potted to larger pots every few months if they are growing quickly. They grow best in light shade with no more than three or four hours of direct morning or afternoon sun. They do not like any strong direct light. On the other hand they do not do well in deep shade either. You may want to plant them in the ground if you have a suitable location. They can grow very fast in the ground, as much as two meters in six months.

The stems of *Salvia divinorum* are not very strong, when the plant gets taller than about one meter tall it will fall over if not given support. Sometimes the stem will break off, but usually it will just bend over and if the bent over stem is in good contact with moist soil it will quickly root and eventually send up new stems from the new location. This is the main way that the plant spreads in the wild since it almost never produces viable seed.

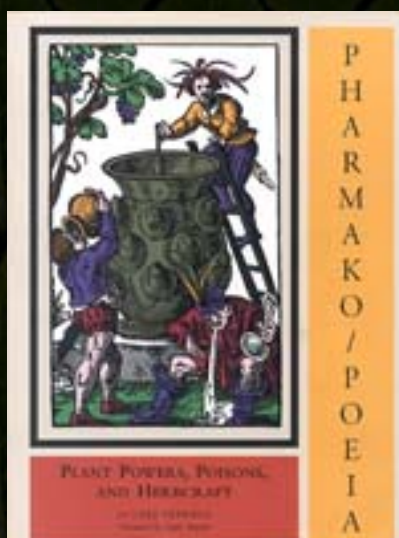
The ideal temperature range for the plant is about 15 - 27C (60 - 80F). They will readily tolerate temperatures about 10C (18F) above and below this range but the plants tend to grow slowly outside of their ideal temperature range. It also prefers a fairly moist atmosphere and will be happiest when the relative humidity is above 50%. Dry air tends to cause the plant to put out deformed growth.

Some exceptional first-hand accounts of Salvia divinorum experiences

(This site is created and maintained by [Daniel Siebert](#))

- 📖 [Salvinorin A - The Breakthrough](#) by Daniel Siebert
- 📖 [A Peaceful Flatness.](#) by Fiona Webster
- 📖 [Home.](#) by Phume
- 📖 [Montmartre Rolls Up](#) by Tian
- 📖 [Spinning to the Core of the Abyss](#) by JT
- 📖 [The Whole Ball of Wax](#) by Sage Student
- 📖 [New Existential Eyes](#) by Kevin
- 📖 [Tibetan Sunset](#) by Crocodile
- 📖 [Tunnels](#) by Raven
- 📖 [Each Grain of Sand - a Star](#) by Charles
- 📖 [On the Amazon](#) by Chokwe
- 📖 [Three Rivers Run Through It.](#) by Sage Student
- 📖 [The Souls of the Navajo.](#) by dana
- 📖 [The Other Side.](#) by Anonymous
- 📖 [One Second at the Beach](#) by Tian

- 🔍 [The Folded Continuum](#) by H.I.D.
- 🔍 [Becoming Light](#) by Jason Westbrook
- 🔍 [Wanton Desire](#) by Will Penna
- 🔍 [Holy Sombreros](#) by Sage Student
- 🔍 [The Smell of Rain](#) by Spyre



Pharmako/poeia

The Salvia divinorum chapter
by Dale Pendell

(This site is created and maintained by [Daniel Siebert](#))

Dale Pendell has graciously agreed to share this, the *Salvia divinorum* chapter from his extraordinary book: *Pharmako/Poeia: Plant Powers, Poisons, and Herbcraft*. Published by Mercury House, San Francisco, 1995. There is a tremendous amount of depth in this piece of writing. Every time I read it I discover something new. Pendell has distilled the essence of the *Salvia divinorum* experience into a vessel of poetry.

If you would like information on ordering this book, please go [here](#).

"An epic poem on plant humours, an abstruse alchemic treatise, an experiential narrative jigsaw puzzle, a hip and learned wild-nature reference text, a comic paen to cosmic consciousness, an ecological handbook, a dried-herb pastiche, a counterculture encyclopedia of ancient fact and lore."

— Allen Ginsberg

"Dale Pendell reactivates the ancient connection between the bardic poet and the shaman."

— Terence McKenna

Salvia divinorum

Common names:

Diviner's sage, ska Pastora, hojas de la Pastora, seer's sage, la Maria.

The "Just This" Plant. The "Emptiness" plant.

Related species:

Salvia divinorum contains a diterpene, salvinorin. Some *Coleus* species are rumored to contain similar compounds, but this is still unconfirmed (bioassay reports are mostly negative).

Salvia splendens contains salviarin and splendidin, both diterpenes, and we should expect more from other species. No psychotropic activity has been reported for those but that does not close the case--I heard background whispers of "placebo effect" for years when talking about the powers of dried ska Pastora leaves!

Salvia sonomensis contains a camphorlike substance that is a mild stimulant when smoked. *Salvia officinalis* contains thujone, constituting in some varieties over fifty percent of the essential oil.

But those plants don't really have anything to do with me.

True.

Taxonomy:

A true sage, like cooking sage. Mint family. There are a thousand species in the genus, and five hundred species in the Neotropical subgenus *Calospatha*, to which *Salvia divinorum* belongs. Many temperate *Salvia* spp. are adapted to xeric conditions, such as the black sage (*Salvia mellifera*), white sage (*Salvia apiana*) and purple sage (*Salvia leucophylla*) of the California chaparral. *Salvia divinorum* is a hydrophyte.

The Plant:

Square-stemmed, winged margins, the stems hollow and succulent. The stems will grow to over eight feet if supported. Commonly they fall over, rooting where they fall. Axillary branches easily sprout from the nodes. The plant flowers when the days shorten: long graceful racemes of fragrant white flowers, the calyces deep lavender. I sprinkle the flowers into salads.

The Ally:

She can be shy. Sometimes she has to get to know you for a while, before she will come out and say hello. But once she appears, are there any who are more direct?

Part Used:

The leaves. The stems can be juiced.

How Taken: The Path of Leaves:

Thirteen pair of leaves, the stems all facing the same direction, are rolled into a cigar and eaten. That is the traditional way, the way of the Keepers of the Plant, the Mazatecs. The leaves are used the same way mushrooms are used, with candles (which are later put out), prayers, and singing. The ceremony is performed at night, in a darkened room. The darker the better. And the quieter the better: both light and noise have a way of dissipating the experience.

It is not uncommon for the Mazatecs to wash the leaves down with a swig of tequila. The tequila cleanses the palate and may aid in the final absorption.

It lights up the mouth like a rainbow,
it's like a pastel sunrise breaking in the east.

There are strict taboos to keep for several days after eating the sacred leaves, such as not having any sexual contacts. It is also important to be ritually mindful when collecting the leaves, and also in cleaning up after the ceremony.

Chemistry:

Unknown until recently, and still far from understood. In 1982, Alfredo Ortega and his associates isolated a bicyclic diterpene, $C_{23}H_{28}O_8$, from material gathered in Oaxaca and named it salvinorin. Another group, led by Leander Valdes at the University of Michigan, independently isolated the same compound and named it divinorum. Because Ortega published first, the name salvinorin has precedence. Neither author tested salvinorin for human activity, but recent tests by Daniel Siebert and others, myself included, have proved the psychoactivity of salvinorin beyond further doubt.

Other compounds in the fresh leaves may act synergistically in creating the extraordinary and variable effects of this plant, perhaps by inhibiting the lytic action of an enzyme or of the digestive juices.

The Plant:

seer's sage
truth sage
dream sage

ghost sage
lizard sage
mouse sage
soft-footed sage
cymbals sage
roller coaster sage
rocket sage
wake-up sage
it's-like-a-dance sage
silver fox sage
bare light bulb sage
waterfall sage

Effects:

It's like a mirror with no frame: some don't see it at all; some do, but don't like what they see.

It's like cat paws, soft cat paws pressing, or like a bunch of bird tongues lapping the mind. Or like tiny fingers, the way ivy fingers reach out to climb a wall . . .

Some say it is a sensual and a tactile thing. Some say it's about temporality and dimensionality--that it's about time travel. Some say it's about the Root Energy Network, or that it is about becoming a plant.

"Bird tongues lapping the mind." We timed them: they hit four or five times per second. It may be the theta rhythm.

How Taken: The Bridge of Smoke:

The dried leaves may be smoked. A large-bowled pipe, like a tobacco pipe, is about right. Rolled cigarettes are less satisfactory, because it is difficult to get a deep lungful of the smoke. Hold the smoke in. One to three lungfuls are enough.

Five or six small tokes do not produce the same effect as one large inhalation. The reasons for this are not clear. Perhaps the brain responds to salvinorin within seconds, with neurochemical defenses.

The best technique is to use the Val Salva maneuver, beginning by emptying the lungs of air and then layering the smoke until the lungs are completely full. Then hold the smoke in as long as you can. Release gently.

The Ally: Bridge of Smoke:

Frequently people experience little effect from the leaves in their first meetings. The power of the leaves seems to slowly build toward a climax with successive ingestions. Diaz was the first to comment in print on this phenomenon. He drank the juice of the fresh leaves six times and noticed an "increased awareness of the plant's effects" each time.

Contrarily, sometimes the ally rolls over and crushes a person without warning, first visit. And a few people seem obdurately immune.

Effects: The Bridge of Smoke:

Over a period of several weeks, everything around me gradually became more intelligent.

Pharmacology:

Completely unknown. Salvia divinorum represents an entirely new class of entheogen. A Novascreen receptor site screening sponsored by David Nichols discovered no binding inhibition for the forty reference compounds tested, covering all major known receptors.

Salvia divinorum contains no alkaloids. In screening plants for psychoactivity, plants that do not contain alkaloids are routinely thrown away. Clearly that approach is too hasty.

Because of the quantity of material that must be ingested for diviner's sage to be fully active, it occurred to me in a light moment that any plant would be entheogenic if one ate twenty-six whole leaves at a sitting. That's a joke, but you can't really get the point until you eat diviner's sage yourself.

It is bitter, my brothers.

Effects, Physical:

Some people experience hyperthermia, a warming of the body. Nausea is rare, though by the eighth swallow of the leaves the gag reflex becomes overwhelming. Still, except for the swallowing part, almost nobody gets sick at the stomach.

The Plant:

It's faster than the mushrooms, and older.

An extremely rare cultigen, found only at a few locations in Oaxaca. There are specimens in botanical gardens, and in a few private collections, but lack of genetic diversity is a concern.

The plant is endangered by the forces of imperialistic religion, and has been for four hundred

years, possibly longer.

Her real name must not be told--

Her real name is closer to Medusa than to Mary.

"They came with crosses--
they came to drag us
from our huts, from our beds,
the soldiers that serve the priests."

en el nombre del Padre
en el nombre del Hijo
en el nombre de Espirito Santo

The Ally:

Consciousness has to do with energy and light. It is really very simple. Neither animals nor people have consciousness. It is plants that have consciousness. Animals get consciousness by eating plants.

We like to walk around sometimes, and to see new places.
We like some of those animal things, like mating.
Sometimes we get curious
to see what it is like to program computers.

The Plant:

This plant is the great secret of our tradition.

Not secret anymore!

Few have heard of it. Fewer know what it looks like. Fewer still have ever met the sagely ally, yet the alliance forms invisible links wherever it goes, across continents and across oceans. The Ally blesses some, eludes others.

That such an ordinary looking plant, kind of succulent and without any alkaloids, can be as subtle and effective as the seer's sage is, causes one to wonder about other green plants--that perhaps there are other such, sisters to this sage, waiting for someone to give them the time and attention they deserve.

People ask, "If it's really so good, why is it so obscure, why haven't more people heard of it?" The answer partly has to do with history, and partly with intention, and perhaps partly with the intrinsic nature of the plant's effects.

First off, the plant is not at all obscure to her people. They know her and love her, or know her and don't love her (some think the plant devilish). Most of our ("our" meaning Western literate culture) current knowledge about Ska Pastora can be traced back to the visit of Gordon Wasson and Albert Hofmann to Maria Sabina. Most of "our" plants are also from this transmission. Several particulars of the Wasson/Hofmann/Sabina meeting account for some of the plant's recessive reputation. For one, Maria Sabina's primary ally was the mushroom: she only used the little leaves when the children were out of season. But there are other curanderos who prefer the leaves to the mushrooms. Don Alejandro says that taking the mushrooms too often "will make you crazy," but that the Virgin, who speaks through the leaves, is more gentle.

Second, when Hofmann returned to his laboratory at Sandoz Pharmaceuticals in Basel, he had brought some juice from the Salvia leaves back with him, "preserved in alcohol." When this juice was deemed by self-experiment no longer to be active, Hofmann abandoned his intention to analyze the juice for its psychoactive principle(s). Hofmann reported that the unknown active ingredient must be unstable. This belief was incorrect but tended to inhibit further research for some years. My own reports on the effectiveness of smoking the dried leaves were dismissed by a number of my colleagues.

On the matter of intention, to quote Lao Tzu: "Those who speak do not know, those who know do not speak." Most sage people would rather not have their beloved ally spotlighted, or scheduled, or even much heard of or spoken about.

"This is the sneaky one.
We caught all the others,
but we couldn't catch
this one--
this one was too subtle.
We've been after this plant
for almost five hundred years."

Lastly, I think that some of the plant's obscurity is intrinsic and will endure. How many really want to see? Most people are after the side effects, and in the matter of sensual side effects the little leaves are indeed a little sister to such a giant as Cannabis.

But just because the plant is not a party-goer, is not harmful, and is not abused anywhere in the known world does not mean that it would not be persecuted by those who rule by fear, if they knew of its existence. So in summation we will reiterate the early assessments of the plant and agree that it is a minor psychotropic of well-deserved obscurity.

Now say "mum."

Mum.

The Ally:

This plant has a sense of humor!

The Plant:

garden green sage
bitter bitter sage
compost sage
sweet smoke sage
riverbank sage
shade-leaf sage
crenate-leafed sage
come-to-me sage
get-the-willies sage
whispering sage
get well sage
get fooled sage
candle-in-a-wind sage
nobody knows it sage

The Ally:

It is when you are really stuck, when you really don't know what to do, when you are nearing the edge of funk and self-destruction, that the leaves are the most powerful and the most precise. And symmetrically, for one not seeking engagement, for one seeking diversion, the plant is not much fun. Outside of her sacred context, *la Pastora* has surprisingly little to offer.

It's not a spectator drug.

Indeed.

History:

It seems likely that *ska Pastora* was once much more widespread than it is today. Cultigens generally have long histories, and *Salvia divinorum* is probably no exception. What is not clear is whether the decline of the plant began with the Spanish Conquest, or whether it was already in decline, and, if so, if the reasons were religious or political, or something else.

Gordon Wasson speculated that *Salvia divinorum* was the *pipilzintzintli*, the "Noble Prince" mentioned in Aztec codices. One problem with this identification is that *pipilzintzintli* was said to have both male and female varieties while our *ska Pastora* is, botanically speaking, perfect. The Aztecs were skilled botanists and surely knew the difference between male flowers and female

flowers. But it is also possible that the reference to gender is metaphorical, relating to nonanatomical properties of the plant, rather than to dioeciousness. There are some known examples of such use of gender, so Wasson may indeed be correct. It would be extraordinary if a plant of the power and stature of ska Pastora were not well known to the Aztecs.

The Ally:

Questing for the muse's spring, up some cold canyon,
stormdrain, up bloodvessels, canyonwalls of
flesh, rhythms surging in the darkness--
the home of the leaves, their nest within
the soul: even consciousness needs a soul. The plants
have consciousness, but no souls. For some of them,
that isn't enough.

How Taken: The Path of Leaves:

Six to ten or more leaves are chewed into a bolus and kept in the cheeks. The absorption is through the buccal membranes. Siebert's experiments (Siebert 1994) with the juice of the leaves demonstrate conclusively that most, if not all, of the power of the leaves is deactivated in the stomach. In Siebert's experiments, those who swallowed the juice quickly and then rinsed out their mouths with water experienced no entheogenic effects, while the group that simply kept the juice in their mouths and never swallowed it were all affected strongly.

I still prefer chewing and swallowing, if only from a sense of tidiness and tradition. Chewing with your cheeks full keeps the material in motion and insures that all parts of the mucosa are constantly bathed with sage leaf. More than once it has seemed to us that it is the stems, those chewy, chewy stems, that finally push it all over the edge.

One intrepid researcher called Salvia divinorum "the best-tasting psychedelic plant he'd ever eaten." Good point.

Effects:

The effects are different, depending on how the plant is ingested, on whether you meet the ally on the Path of Leaves or by crossing the Bridge of Smoke. And also depending on whether the plant has accepted you. That's metaphorical. Or is it? What neurochemical explanation could account for a threshold that, once breached, will still be open a year later, with no exposure to the plant intervening? Besides, neurochemical explanations are also metaphorical.

The plant is self-concentrating.
Your body is the alembic.

Smoking the dried leaves produces immediate effect. The effect of eating fresh material, while slower to come on, is a deeper and more sustained experience, often with strikingly colored visuals. Drinking tea made from dried leaves falls somewhere in between. (Salvinorin is practicably insoluble in water. The best way to "ingest" dried leaves is to soften them with some hot water, then keep the leaves in the cheeks just as with fresh material.)

Note that while the dosage by ingestion is ten to thirty leaves, the smoking dose amounts to one or two leaves.

It's the immediacy, the seamless immediacy . . .
sometimes it's like it doesn't do much
of anything at all, but how many plants
do nothing with such clarity!

The Plant:

There are rumors that the seer's sage may grow wild on some of the less accessible plateaus in Oaxaca, but this is unconfirmed. Her people grow the plant beneath coffee trees, or along streams in ravines. They reportedly do not grow it next to their homes.

at night, it might envelop the house . . .

The plant is very patient.

The Ally:

She has many epiphanies. Not all of them are shy, and not all of them are "she." One person encountered the Ally as a giant(an immeasurably ancient giant wearing a belt of human skulls. The giant looked directly at this person. The giant wanted to know why he had been summoned. The giant did not want a trivial answer.

The Plant:

checkerboard sage
paisley sage
amazing sage
calico ribbon sage
vortex sage
owl sage
shape-shifting sage
skin-walking sage
who-are-you? sage
something-is-moving sage

get serious sage
look-we-have-come-through sage
on your own sage
she's leaving home sage
metate sage

Class:
Existential.

Ska Pastora is not a hallucinogen. That is not to say that it does not share some of the characteristics of class phantastica, it does. But there are also differences. The "true" hallucinogens all act on the 5-HT₂ receptors. While the receptors of diviner's sage have not been discovered, the experiential evidence points to some new receptor, or to some holographic inundation of mind. And while many hallucinogens will help one's golf game (or, as Dock Ellis proved, one's major league pitching), a certain muscular discoordination accompanies the sage inebriation.

On the Pharmako/Poeia mandala, I put the little leaves on the path between phantastica and inebriantia, and name it existential . By existential, I do not mean anything Cartesian, nor even David Bohm's separate-from-self implicate order, but mean that which precedes essence.

It's a personal thing. Existence.
If you can just stop thinking about it.

Salvia divinorum is what you get by crossing an entheogen with an atheist.

Effects:
It's not like being high, it's more like being practical.

Correspondences:

Activity	Domestic Affairs
Animal	Uroboros
Archetype	Fortune Teller
Art Form	Lyric Poetry
Bodily Function	Circulation

Body Part	Mouth
Buddha Realm	Prajna Bhumi
Color	Cobalt Blue
Cosmic Entity	Singularity
Crutch For	Indecision
Dimension	Fractal
Discipline	Augury
Element	World-Stuff
Form of Energy	Windmill
Form of Ignorance	Complacency
Gemstone	Tourmaline
Geometry	Topology
God	The Mother of God

The Plant:

In all of our Pharmako/Poeia, this plant is the hidden pearl. Poets, like vintners, love such surprises, and seek them out beyond their better known brothers and sisters: an unknown poet found in a faded chapbook with light in his verses, an obscure vintage the reviewers missed, dust-covered, but filled with mouthfuls of delight. The little leaves, hiding off in the mountains, have successfully avoided the front pages for four centuries.

A Taoist sage, in another range of mountains, after many years of studying the secrets of alchemy with his master, feeling fully accomplished, descended the mountain to move into the world. When evening approached, he stopped at an inn. The people at the inn marveled at the light that seemed to hover about him--a sort of magical glow. The sage was chagrined, realizing that his studies were only half completed, and returned immediately to his teacher.

To visit the hojas de la Pastora is to visit an oracle, and she should be approached with the same reverence.

Caravans of gold, threading their way

from Sardis to Delphi

Why would someone want to consult an oracle? Why would someone seek a vision? Or it's like talking to a therapist, to a counselor--the leaves are like the kalyanamitra, the spiritual friend. They can tell you things.

Or make you eat your words.

It is difficult to speak.

Poesis:

Recent studies by Aaron Reisfield (Reisfield 1993) demonstrate that *Salvia divinorum* is not completely self-sterile, as had been assumed: the plant can produce viable seeds, though very infrequently. Nor did Reisfield find any significant difference in the production of viable seeds from flowers pollinated from the same clone and those pollinated by plants collected from different localities. It is of course possible that there is little genetic difference between any specimens of *S. divinorum*, even those that today grow in widely separated areas in Oaxaca.

Reisfield's observations strongly suggest that *Salvia divinorum* is a hybrid. The pollen grains of *Salvia divinorum* have low viability, indicative of disharmonious parental genes. But low pollen viability is only part of the reason that *Salvia divinorum* rarely sets seed. Even with hand pollination only 2 or 3 percent of the nutlets mature. Further exacerbating the problem of reproduction, in Mexico, the plant only flowers sporadically. Flowering seems to require more sun than is optimal for vegetative growth, so it is only plants growing on the margins of its normal habitat that flower at all.

The main barrier to fertility, according to Reisfield, occurs after the pollen tube reaches the ovary. But he was unable to determine whether the infertility was due to inbreeding depression, a condition not uncommon among plants with a long history of human relationship; hybridity; or some delayed-action effect of self-incompatibility. If *Salvia divinorum* is indeed a hybrid, the parents are long lost in poisonous prehistory--Reisfield knows of no two sages that would account for the morphological features of la Maria.

For you, if you want ska Pastora, you will have to get it the same way everyone else has for the last two thousand years: from a cutting from someone who grows it.

If your shoot is already rooted, or if you live in a humid climate, you can go ahead and plant it directly. Plant it in shade or scattered light, the leaves don't tolerate a lot of direct sunlight--I've had some plants do well with almost no sun at all. If you live in the arid interior, you may have to mist the leaves regularly, or protect them with a humidifier. Ska Pastora loves the redwood country, where it gets fog.

The plant will thank you for some feeding. She needs water, lots, but be careful about root-rot in pots. Also, the plants wither if they get root-bound. Protect them from frost.

The Ally:

Once you see it, you know it
Was there all the time, so why
Is it all such
a big deal? And why
do we keep forgetting?

Correspondences:

Goddess	Isis
Grammar	Presyntactical Mammalian
Historical Age	Future/Eon
Image	Labyrinth, Hall of Mirrors
Landscape	Garden
Logical Operator	Identity
Machine	Bathyscaph
Metal	Antimony
Metaphor	Borders
Mineral	Turquoise
Musical Instrument	Bull-Roarer
Myth	Parallel Universe
Number	Complex
Occupation	Poet/Soothsayer
Out-of-Body Realm	Clairvoyance

Periodic Table Col.	Rare Earths
Phase of Matter	Nuclear Condensed
Philosopher	Anaximander
Physical Constant	Fine Structure Constant $\alpha=2\pi e^2/hc$
Planet	Moon
Poison	Terror
Proportion	Radial Symmetry
Quark	Nen, the Quantum of Time

On Divination:

I used the Bridge of Smoke, laying out the cards. I had smoked lots of times before but this was the first time it really happened. An abyss opened. History opened. The manipulation of the cards by my hands seemed to amplify the effect. The cards fell perfectly. Each one revealed the details and development of my story with a uniqueness that was hair-raising. Then I remembered how Crowley had said that you have to get to know the cards as people. The instant I thought that, the bottom dropped out of the cards, the background of each card became a hole in the table, like an open grave. Then the little figures on the cards moved a little. They shook free and started floating about an inch above the top of the table. They were all standing up and looking at me, waiting for me to ask them something.

The species is well named.

The Ally:

It's anti-escapist, the opposite of escaping. It's not likely to be popular. It can be empathogenic, but it's more telepathic than emotional. It lights up a person's soul: we hear/know what they really think, what they really want, what they really have done. It's ideal for couples work, for keeping in touch.

On The Darkness:

The ally loves the darkness. Light can interrupt and suspend even wildly cosmic and disembodied states, seamlessly returning the petitioner to the mundane. Sometimes it is necessary to turn on the lights to attend to something or someone, a child perhaps. What is amazing is how immediately the interdimensional space reasserts itself when the lights are again put out.

The essence of the Path of Leaves is just a few friends sitting around in a dark room, perhaps drinking a little beer or tequila. Some talking. Maybe some singing or chanting. To how many people does that sound like a good time?

What a joke! No wonder some people can't stop laughing.

Or maybe the darkness is to keep others from looking in.

It may always have been a cultish plant, something on the edges.

La Maria is shy. She needs the darkness to illuminate the Logos.

Or maybe the nighttime tradition is to avoid interaction with the rootless. The Ally will take you beyond the little social games that sustain the daylight. You will see the rigidity, but you may not see the importance of sometimes playing along. An uncompromising insistence on the absolute could get quickly boorish.

Besides, daytime you have a job and have work to do.

Effects:

Holographic. Even a very tiny amount of smoke can reveal the whole panorama. Dimly, to be sure, but all there, just the same.

The Ally:

There was no me, but there was no not-me.

The most "Zen" of any plant ally excepting rice.

Effects:

Staggering. Lurching. But not like drunkenness: the mind is completely clear. The effect is reminiscent of kava.

On The Logos:

The poison has entered the Word. Words become stepping stones, a floating walkway to cross the chasms between.

What we really are is a web of interconnections, the summation of all of our relationships, all the people we know and those we are still to meet. It's not that we are in the web, the web is what we are. Vowel sounds change the colors; pitch and tone alter the shape of the enclosing

space; semantics create texture. Sentences become palpable things, they take visible and tactile form, flying or sinking.

But all in the mind's eye, not in the eyeball: an interactive lucid dream accessible to the will.

I saw where thoughts come from, visually. Some were just forming--were seething in a kind of liquid surface, some of them went on and blossomed, became people and conversations . . .

Poesis:

Contrary to written lore on Salvia divinorum, the leaves can be dried. If you grow the plant, you may only have enough leaves for fresh ingestion in the summer and fall. I cut my plants back in the wintertime--in case it freezes. I have had little success with freezing the leaves, or juicing them and freezing the juice. Maybe it would work. I just find the juice harder to use than the leaves.

But you can dry the leaves, that's the easiest thing to do. The dried leaves carry the smoking-ally.

Effects (field report: a man, inventor and painter):

"There were things you didn't tell me. It took me a while to learn how to use it. I had to find the right dose. At first I was taking too much, six or seven lungfuls. Two or three is about right.

"It's like heavy zazen, like after a very long period of sitting, the place you can get to there. It's changed my life, turned my life around. Things are really going well.

"It's very intense, I call it a reality stutter, or a reality strobing. I think that having been a test pilot, and flying in that unforgiving environment with only two feet between our wingtips, helped to prepare me for this kind of exploration.

"There is something very pagan about it. I don't think you should tell anybody about it. Sex is fantastic. It sensitizes the skin. And it makes you want to go exploring. And sleep is great, I'm sleeping much better. A. said that it relieved her menstrual cramps. And her attitude."

The Plant:

in-control sage
smooth-moving sage
snake-skinned sage
oh-as-little-as-that sage
fooled-me sage

narrow-nosed sage
weasel-snouted sage
creeps-up-on-you sage
falls-all-over-you sage
loves-it sage
just-grows-and-grows sage

Effects, (field report: a man, poet and writer):

"Hey, all of a sudden that stuff got strong! I used to use it for writing, but I can't do that anymore, it's too strong. But it helps me with some of my business dealings: like it told me how to talk to the producers I had to meet with the next day. I smoke it with my girlfriend. We call it 'the balancer.'"

Effects: (field report, a man, sculptor):

"I had heard that it was going to be mild, so I took a lungful and held it in, and was expecting to have to take many more to feel a mild tingle. But it just overwhelmed me. It was so intense, so immediate. I had tunnel vision, I couldn't see anything except this tunnel in front of me, like I was going to pass out. Everything enfolded. I didn't like it. It was too abrupt, too scary. I recall feeling that if someone had walked into the room I wouldn't even have been able to talk to them. It is not subtle."

Effects: (field report, a woman, painter and poet):

"I smoked it every couple of days for two months. I hate to say this about a plant, but I'm in love with it. It's remarkable. It took six or seven tries before anything happened, almost like it was laying down pathways or something."

my rootlets, my neural rootlets . . .

"Then, all of a sudden, a big whallop, and I mean big. Scary even. It's just remarkable. It is so present, so clear. My life has changed. It has shifted dramatically, and it's because of the plant."

"It is so much what it was, unequivocal. It wasn't like it was a high, it's just Mind. It's so honest! I feel like I was recruited, like I was enlisted."

heh, heh, heh, . . .

"It has to do with specificity, the differentiation of form. Every form is filled with its own luminosity of detail. And this is true emotionally also, of my own emotions. Even the days in between the days I smoked I still felt I had this direct access. It's like the feeling after a meditation retreat, the post- sesshin feeling."

"I mean maybe I'm making all of this up. Maybe it was just oregano, but I call it 'my sweetheart.'"

The Plant:

green-straw sage
comes-clean sage
one-puff sage
thin-skinned sage
gets-inside sage
falls-in-love sage
tells-you-she-loves-you sage
don't-get-antisocial sage
get-to-work-on-time sage
lizard-skinned sage
smoke-skinned sage
just-grows-and-grows sage

Effects:

It just gives you where you are. Wherever you are, that is what you get. If you are in darkness, you fly through darkness. The light and the faces you see are the faces that you always carry, the mental faces, lit by the glow of mind. If you are with your lover, the plant is an aphrodisiac.

The Ally:

With the leaves there is no place to hide. That is why it is good for finding lost objects or for identifying thieves. It is a poison that illuminates poison: use it to find dis-ease.

Correspondences:

Quantum Force	Ψ / Schrödinger Wave Equation
Realm of Pleasure	Skin
Ritual Event	Birth
Rock	Ophiolite
Season	Samhain
Sense	Sixth
Sexual Position	Scissors

Sign	Pegasus
Sin	Lust
Social Event	Exile
Tarot Key	Moon
Time of Day	Midnight
Tool	Phurbu
Virtue	Temperance
Vowel	High Back /u/

The Ally (field report, daytime):

It seemed that as long as I left the quid in my cheek it kept getting stronger. I spit it out about one-thirty. Had an amazing time typing at my computer: it was like the typewriter from the movie "Naked Lunch." M. drove me to the beach. I felt pretty much back to normal. Late in the afternoon we decided to go to a five o'clock movie. We had some time before the movie and I strolled through a used book store. A couple of poetry books were on the display shelf. Picked up Tagore. How vacuous! All those high-sounding words but no substance. He had only read about it, thought about it. It was all lies! It was so clear. The book next to it was A. E. Housman. Dense, but legitimate. It was there. He did it through clues.

Suddenly I felt completely disoriented. What a fool I was to be out in public. How did I think I could handle going to a movie? The question "How high does it get you?" is meaningless. It's nonlinear. Only the threshold was significant, and the threshold could be so subtle!

Poesis:

One of the active ingredients of *Salvia divinorum*, salvinorin, can be extracted from the leaves. Valdes and his group at the University of Michigan isolated 1.2 grams of salvinorin from 5.35 kilograms of fresh leaves, which they dried to 674 grams of milled powder. Valdes didn't report how many leaves he started with, but the leaves that I pick average 2.3 grams fresh, and dry to about 0.45 grams. That works out to between 1,450 and 2,350 leaves to yield 1,200 milligrams of salvinorin, or between 500 and 800 micrograms of salvinorin per leaf. I crumble up several leaves into my pipe, but never smoke more than a quarter or a third of the pipe, which is about one dried leaf. So, back-of-the-envelope, salvinorin is active at ranges of 500 to 800 micrograms, about twenty time more active by weight than DMT (dimethyltryptamine).

Quantitative experiments by Daniel Siebert, Jonathan Ott, myself, and others have since confirmed the arithmetic.

Effects, Salvinorin:

Many experience childhood scenes. Parents may be represented abstractly. Exceedingly fast changes of scene. Ontological revelations.

I have found one salvinorin "hardhead." Under my supervision, the man carefully and properly smoked a full milligram of salvinorin, vaporized in a glass pipe. After a few minutes he shrugged his shoulders, got up, and, trying to be polite, remarked that "maybe there were some visuals."

Poesis:

All of the information needed to isolate salvinorin is in Valdes's paper (or, another method, in Ortega's paper). While Ortega and Valdes had to isolate pure crystalline salvinorin quantitatively, simpler extractions would suffice.

But all of this raises some questions. Why do it? On the "Crystal Highway" the ally often shows a more precipitous, and more terrifying, face than she does on the Path or on the Bridge. Many who meet the ally on the Crystal Highway never wish to repeat the experience. The ally is always fast, but on the Crystal Highway she is superluminal. And controlling dosage at the microgram level requires some skill. The raw leaf seems so exquisitely balanced already.

The plant is legal; just grow it. You may learn something. It is plenty strong enough in its fresh or dried form. It is benevolent in that form. When you start dealing with molecules in micrograms, with glass pipes, with overdoses, you are up against possibly serious issues of toxicity. And the sacred leaves of the shepherdess become a commodity. And then there are the legal considerations.

My advice is to make friends with the plant. If you want to socialize, consider smoking cannabis; if you want to get high, try nitrous oxide or smoking DMT. Only if you are ready to walk with an ally should you attempt the Path of Leaves or cross the Bridge of Smoke. Just don't blame me if the green beings recruit you, and you become a plant disguised with legs instead of a person.

Effects, Salvinorin: The Crystal Road:

I thought that I had measured out 600 micrograms. Later it occurred to me that a substantial amount of the solvent had evaporated in storage, and that each drop was as much as doubled in potency.

The fast drop. A trapdoor. Like on the scaffold of a gallows. The frightening terror of absolute emptiness.

His head dropped onto the table and his arms splayed out. The cards flew all over. He fell out of his chair, some vases and books and another chair falling

with him. Then his body twitched and I watched him turn into a bear. His whole body grew taut. A deep guttural growl sounded from his throat and he began speaking in tongues. His eyes had completely glazed over. None of it was pretend. I saw the strength: two men couldn't have held him down, if he had run amok.

Trance. Possession. The other side of shamanism, across that terrifying abyss: shape-shifters. There live skin-walkers and werewolves.

Think twice before offering a full moon medicine to a shape-shifter.

The Crystal Road: (field report, a man, artist):

All of the parallel universes were there. My childhood was there, and the death of my son. It was pure terror, all of it swirling through these breaks in time, breaks in what moments are made of. The whole universe was turned inside out. To get back I had to pull it all back through my asshole.

I had to destroy the worlds that I didn't choose to exist in. And some of them tried to stop me from doing that, they kept calling to me, telling me not to do it, that they wanted to exist. We were in the place you are before you are born, and the place you go to after you die. Once you step out of time, once you break through that continuum, all spaces are connected.

That I existed was the most amazing thing. The whole thing was an absurdity, but I couldn't come back unless I accepted it, all of it. All the pain of my life was waiting there, I---'s death was there waiting, but it was like I had to choose, it took effort. I had to accept all of it in order to return to this particular universe.

Poesis:

Ortega extracted dried and milled leaves with hot chloroform. He isolated salvinorin from the green residue left over after evaporating the solvent with column chromatography. He used thin layer chromatography to test for salvinorin in the fractions, and found it in the sixth and seventh of thirteen. The TLC plates were developed with 10 per cent phosphomolybdic acid in isopropanol (ethyl acetate/hexane, 45:55, $R_f=0.7$). Crystallize from methanol, melting point 238-240°C.

Valdes extracted with ether. He partitioned the dried extract between hexanes and 90 percent aqueous methanol, saving the polar components in the methanolic fraction.

An excellent product I call "4x" can be prepared by evaporating an ethanolic (or methanolic)

extraction of the dried leaves, and sopping up the oily goo left over after evaporating or distilling off the solvent with "cleaned" leaves rubbed through a strainer. Use an amount of cleaned leaf equal to about one-quarter the original weight of the leaves extracted. The 4x enrichment is suitable for smoking in small pipes.

I've tried "10x" also. In that case, wash out the non-polar compounds from the goo with hexanes, more or less as outlined by Valdes. Keep track of your weights.

Ethnobotany:

Tea brewed from four or five pairs of leaves is medicinal. Mazatecs use the tea for headache and rheumatism. It is also said to be good for anemia and problems of the eliminatory functions.

The Plant:

The leaves of the moon. With no other plant are preparation and ground state training so crucial. Ska Pastora is a moon doctors' plant. It could typify lunar medicine all by itself, its light is so pale and white. The lunar medicine is needed not to avert disaster, as is sometimes the case when dealing with the phantastica, but to hear the words, to comprehend the presentation. "Just this" is not at all the same thing as "merely this."

She will take who you are and run away with it faster than any plant I know.

Effects:

The word incredible gets used a lot.

How Taken: Bottom Line:

Grow enough leaves to provide eleven to twenty-two leaves, thirty to sixty grams, for each person. It is traditional to have an extra bundle on hand as a "booster" for those who desire to return to the trance after their initial voyage.

Arrange the leaves so that the stems all face the same direction. Place them on the altar. Burn a little incense. Do this in a comfortable room, with cushions, preferably one that can be completely darkened. In the city, a tarp pinned over a window will keep out streetlights and such. Start as soon as it is dark.

By candlelight, roll your bundle of leaves into a cigar and chew away until it is gone, or until you can't find your mouth. Or until. Chew well. If you are not going to swallow, or are not going to swallow all of it, provide each person with a nice dish or basket to receive the exhausted quid. But chew long and well. Then blow the candle out. Be accepting. Cleanse your palate with some tequila, or some beer.

Are your eyes open or closed? Are you sure?

After about forty-five minutes, if you didn't finish all of your leaves, eat the rest. Or eat six or twelve new leaves, if you are inclined. Chanting and singing are appropriate, as is some tobacco. It is easier to get the leaves down if you have fasted half a day before the velada. Eat after: at midnight or thereabouts.

Best not to drive, but, if you must, never before you have eaten. Soups go well, and fruits.

Remember: your friends, the darkness, the gathering, and the chewing are all integral parts of the whole experience, and have been so for many, many centuries. The ancestors of two kingdoms await you.

The Ally:

Sometimes the sage whispers, sometimes it shouts.
Sometimes it tells you to sing, sometimes
it takes your voice, walks off, leaving you
rooted, eyeless, and with the kind of voice
a plant has.

The Plant:

Enthusiasm. Entheos.

The plant of the gods, brought within.

La planta de los dioses.
La planta amada de los dioses.

The wise plant, the sage plant,
the plant of the Savioress.

La planta sabia.
La salvia de las adivinas.
La salvia sabia.

We welcome the plant.

La planta que salva.
La Salvadora de los sabios.

We are not different from the plant.
It is we who must save the gods.
It is we who must be diviners.

Somos nosotros que debemos que ser adivinos.

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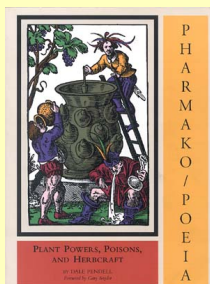
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Pharmako/poeia

Il capitolo Salvia divinorum

di Dale Pendell

(altre informazioni nel sito di [Daniel Siebert](#))

Dale Pendell ha gentilmente acconsentito di condividere con noi questo capitolo; il capitolo *Salvia divinorum* tratto dal suo libro straordinario: *Pharmako/Poeia: Plant Powers, Poisons, and Herbcraft*. Pubblicato da Mercury House, San Francisco, 1995. Per informazioni su come ordinarli, vai [QUI](#)

"un poema epico sugli umori delle piante, un astruso trattato alchemico, un gioco di costruzioni ad incastro di narrativa sperimentale, un testo di riferimento sulla natura incontaminata, in peana comico alla coscienza cosmica, un manuale ecologico, un pastiche di erbe essiccate, un'enciclopedia controcultura di antichi fatti e tradizioni."

- Allen Ginsberg

"Dale Pendell riattiva le antiche connessioni tra il poeta bardo e lo sciamano."

- Terence McKenna

Salvia divinorum

Nomi comuni:

Salva dell'oracolo, ska Pastora, hojas de la Pastora, salvia del veggente, la Maria.

La Pianta "Solo Questo". La pianta del "Vuoto" .

Specie affini:

Salvia divinorum contiene un diterpene, salvinorin. Si parla di composti simili ritrovati in qualche specie di *Coleus*, ma non se ne ha ancora alcuna conferma (i rapporti di laboratorio sono per lo più negativi)

Salvia splendens contiene salviarina e splendidina, entrambi diterpeni, e potremmo aspettarci anche di più da altre specie. Non si è registrata attività psicotropica per questi diterpeni, ma il caso è ancora aperto. *Salvia sonomensis* contiene una sostanza, simile alla canfora, che è leggermente stimolante quando è fumata. *Salvia officinalis* contiene thujone, che in alcune varietà costituisce più del 50% dell'olio essenziale.

Ma queste piante non hanno molto a che fare con me.

Vero.

Tassonomia:

E' una vera salvia, come la salvia da cucina, famiglia della Menta. Ci sono migliaia di specie in questo genere e 500 specie nel sub-genere neotropico *Calosphaceae*, a cui appartiene la *Salvia divinorum*. Molte specie temperate di *Salvia* spp. si sono adattate alle condizioni xeriche (umide) come la salvia "nera" (*Salvia mellifera*), la salvia "bianca" (*Salvia apiana*) e la salvia porpora (*Salvia leucophylla*) del chaparral Californiano. *Salvia divinorum* è una idrofita.

La Pianta:

Dal fusto squadrato, con margini alati, steli cavi e succulenti, cresce oltre gli otto piedi (più di 2,5 m.) se ha un sostegno. Di solito i getti ricadono al suolo e radicano a contatto del terreno. Rami ausiliari si sviluppano facilmente dei nodi. La pianta fiorisce quando le giornate si accorciano, con lunghi racemi di fiori bianchi, dal calice color lavanda scuro. Io spargo questi i fiori dentro le insalate.

L'Alleata:

Può essere timida. talvolta deve imparare a conoscerti per un po' di tempo, prima di venire fuori a dirti ciao. Ma quando appare, c'è qualcuno di più diretto?

Parti Usate:

Le foglie. Gli steli si possono succhiare.

Come Prenderla: Il Sentiero di Foglie:

Tredici paia di foglie, il cui dorso sia disposto nella medesima direzione, vengono arrotolate in forma di sigaro e mangiate. Questo è il metodo tradizionale, il modo in cui la prendono i Custodi della Pianta, i Mazatechi. Le foglie si usano con lo stesso rituale dei funghi, con candele (messe fuori più tardi), preghiere e canti. La cerimonia si compie di notte, in una stanza buia. Più è buia, meglio è. E più è silenziosa, meglio è sia la luce che il rumore portano a far svanire l'esperienza.

Non è infrequente per i Mazatechi sciacquarsi la bocca dalle foglie masticate con un sorso di Tequila. Il liquore pulisce il palato e può aiutare l'assorbimento finale.

*Rischiara la bocca come un arcobaleno,
E' come un'alba pastello che sorge ad oriente.*

Vi sono rigidi tabù da rispettare dopo aver mangiato le foglie sacre, come non avere nessun contatto sessuale. E' anche importante adottare un preciso rituale quando si raccolgono le foglie, e anche purificarsi dopo la cerimonia.

Chimica:

Sconosciuta sino a poco tempo fa, siamo ancora lontani dall'averla compresa. Nel 1982, Alfredo Ortega e i suoi colleghi isolarono un diterpene biciclico, C₂₃ H₂₈ O₈, da materiale raccolto in Oaxaca e lo chiamarono *salvinorin*. Un altro gruppo di studiosi, condotto da Leander Valdes presso l'Università del Michigan, indipendentemente isolò lo stesso composto, che chiamarono *divinorum*. Giacché Ortega pubblicò per primo, il nome *salvinorin* ebbe precedenza. Nessun autore saggì salvinorin sugli esseri umani, ma recenti test di Daniel Siebert e altri, me incluso, hanno provato la psicoattività di salvinorin oltre ogni dubbio.

Altri composti delle foglie fresche possono agire sinergicamente, creando lo straordinario e variabile effetto della pianta, forse per inibizione dell'azione litica di qualche enzima o dei succhi digestivi.

La Pianta:

salvia del profeta
salvia verità
salvia sogno
salvia fantasma
salvia lucertola
salvia topo
salvia dai piedi silenziosi
salvia cimbali
salvia montagne russe
salvia razzo
salvia risveglio
salvia come-la-danza
salvia volpe argentata
salvia lampadina spoglia
salvia cascata

Effetti:

E' come uno specchio senza cornice: qualcuno non lo vede per niente, altri lo vedono ma non amano quello che vedono.

E' come le zampe del gatto, morbide zampe di gatto che premono, o come un mucchio di lingue d'uccello che lambiscono la mente. O come dita minuscole, come le dita dell'edera che cerca di scalare un muro. ..

Qualcuno dice che sia una cosa sensuale e tattile. Qualcuno dice che ha a che fare con la temporalità e la dimensionalità come viaggiare nel tempo. Qualcuno dice che riguarda la Rete d'Energia Radicale- Root Energy Network, o che questa sta per diventare una pianta.

"Lingue d'uccello lambiscono la mente." Le abbiamo cronometrate: battono 4 o 5 volte al secondo. Può essere il ritmo theta.

Come viene presa: Il Ponte di Fumo:

Le foglie secche si possono fumare. Una pipa dall'ampio fornello, quale una pipa per il tabacco, va abbastanza bene. Le sigarette arrotolate sono meno soddisfacenti, perché è difficile prendere una profonda boccata di fumo. Tenere il fumo dentro. Da una a tre boccate sono sufficienti.

Cinque o sei piccole boccate non producono lo stesso effetto di un tiro profondo. Questa ragione non è molto chiara. Forse il cervello reagisce a salvinorin in solo una questione di secondi, con difese neurochimiche.

La tecnica migliore è usare la tecnica Val Salva, cominciando con lo svuotare dall'aria i polmoni e poi farvi propagare il fumo finché i polmoni non siano completamente pieni. Poi tenervi dentro il fumo fin che si può Espirare pian piano

L'Alleata: il Ponte di Fumo:

Spesso si ha pochissimo effetto dai primi meetings con le foglie. Il loro potere sembra avviarsi pian piano verso un climax nelle successive ingestioni. Diaz fu il primo a documentare questo fenomeno. Egli bevve il succo delle foglie fresche per 6 volte e si rese conto di una "accresciuta consapevolezza del potere della pianta" da una volta all'altra.

Al contrario, talvolta l'alleata sconvolge e sbriciola una persona senza preavviso, alla prima visita. E un po' di gente sembra completamente immune in permanenza.

Effetti: il Ponte di Fumo:

Per diverse settimane, tutto attorno a me diventava gradualmente più intelligente.

Farmacologia:

Completamente sconosciuta. Salvia divinorum rappresenta una classe interamente nuova di enteogeni. Uno screening finalizzato per recettori Novascreen, sponsorizzato da David Nichols, non scoprì nessuna obbligatoria inibizione per i 40 campioni di composti testati, che comprendevano i recettori maggiormente conosciuti .

Salvia divinorum non contiene alcaloidi. Negli screening per testare la psicoattività delle piante, quelle che non contengono alcaloidi sono gettate via di routine. Chiaramente quest'approccio è troppo rozzo.

Causa la quantità di materiale che bisogna ingerire perché la salvia del veggente sia pienamente attiva, mi parve, in un momento di lucidità che qualsiasi pianta potesse essere enteogena, se se ne dovessero mangiare 26 foglie intere per volta. E' uno scherzo, ma non puoi rendertene conto finché non provi tu stesso a mangiare veramente la salvia del profeta.

E' amara, fratelli.

Effetti, Fisici:

Qualcuno percepisce ipertermia, un riscaldamento del corpo. La nausea è rara, anche se, a causa della quantità delle foglie ingerite, il riflesso d'ingestione diventa molto fastidioso. Inoltre, eccetto che per questa parte, quasi nessuno soffre di stomaco.

La Pianta:

E' più veloce dei funghi, e più antica.

Un cultigeno veramente raro, trovato solo in poche località in Oaxaca. Ve ne sono alcune specie nei giardini botanici e in qualche collezione privata, ma la mancanza di diversità genetica è un dato di fatto.

La pianta è messa in pericolo dalle forze della religione imperialistica, da 400 anni e forse più !

*Il suo vero nome non può essere pronunciato--
Il suo vero nome si avvicina più a Medusa che a Maria.
"Vennero con le croci--
vennero a buttarci fuori,
dalle nostre capanne, dai nostri giacigli
i soldati che ubbidiscono ai preti."
en el nombre del Padre
en el nombre del Hijo
en el nombre de Espirito Santo*

L'Alleata:

La coscienza ha a che fare con la luce e l'energia. E' veramente molto semplice. Né gli animali, né le persone hanno coscienza. Sono le piante hanno coscienza, gli animali la acquistano mangiando le piante .

*Ci piace andare in giro qualche volta, e vedere nuovi posti
Ci piace qualcuna di queste cose animali, come il fare amicizia
Talvolta siamo curiose
di vedere a cosa assomiglia il programmare computers.*

La Pianta:

Questa pianta è il gran segreto della nostra tradizione.

Non più segreto!

Pochi ne hanno sentito parlare. Ancora di meno sanno a che cosa assomiglia. Di meno ancora hanno incontrato l'alleato in forma di salvia, ma l'alleanza forma già invisibili collegamenti ovunque essa vada, attraverso i continenti o attraverso gli oceani: l'Alleata benedice qualcuno, altri li schiva.

Che proprio una pianta dall'aspetto tanto comune, dalla natura succulenta e senza nessun alcaloide, possa essere così sottile e potente come la salvia del veggente, conduce a porsi domande sulle altre piante verdi - forse ne esistono altre così Sorelle di questa salvia, e stanno solo aspettando che qualcuno presti loro il tempo e l'attenzione che si meritano.

La gente si chiede, "Se è veramente così buona, perché è così oscura, perché così in pochi ne hanno sentito parlare?" La risposta in parte è legata alla storia, in parte alle intenzioni, e in parte - forse - anche all'intrinseca natura degli effetti della pianta.

Prima di tutto, la pianta non è così oscura per il suo popolo. Essi la conoscono e l'amano, oppure la conoscono e non l'amano (qualcuno pensa che la pianta renda indemoniati) La maggior parte della nostra ("nostra " significa cultura letteraria occidentale) attuale conoscenza di *Ska Pastora* può essere fatta risalire alla visita da Gordon Wasson e Albert Hofmann a Maria Sabina. La maggior parte delle "nostre" piante derivano da questa trasmissione. Diversi particolari del meeting Wasson/Hofmann/Sabina fanno scontare alle piante la loro reputazione che è andata un po' in calando . Per esempio, il principale alleato di Maria Sabina erano i funghi: lei usava le piccole foglie soltanto quando i "bambini (niños)" non erano di stagione. Ma esistono altri *curanderos* che preferiscono le foglie ai funghi. Don Alejandro dice che prendendo i funghi troppo spesso, loro "ti renderanno pazzo," ma che la Vergine, che parla tramite le foglie, è più gentile.

Secondo, quando Hofmann tornò al suo laboratorio presso i Sandoz Pharmaceuticals in Basilea, aveva portato con sé del succo di foglie di salvia, "preservato in alcool." Quando questo succo , testato in un auto-esperimento , si rivelò ormai inattivo, Hofmann abbandonò intenzione di analizzarlo per stabilirne il principio psicoattivo. Hofmann ne dedusse che lo sconosciuto ingrediente attivo doveva essere instabile. Questa conclusione era incorretta, ma doveva contribuire a rallentare successive ricerche per qualche anno. I miei stessi rapporti sull'efficacia delle foglie secche fumate furono accantonati da un certo numero di miei colleghi .

Per quel che riguarda l'intenzione, per citare Lao Tzu: "Quelli che parlano non sanno, ma coloro che sanno non parlano" La maggior parte del popolo della salvia preferirebbe non vedere la pianta da loro amata sotto il lampo dei riflettori, oppure vederla bandita, né che se ne parli o se ne senta dire a sproposito.

***"Questo è 'il furtivo'.
Noi acciuffiamo tutti gli altri,
ma lui non riusciamo a prenderlo --
era troppo astuto.
Abbiamo cercato questa pianta***

per almeno 500 anni. "

Infine, penso che un po' dell'oscurità sia intrinseca e che durerà ancora. In quanti vogliono veramente vedere? La maggior parte cerca gli effetti collaterali, e riguardo gli effetti sensuali collaterali le piccole foglie sono proprio delle sorelline per un gigante come *Cannabis*.

Ma solo perché la pianta non va alle feste, non causa nessun danno, e non se ne fa alcun abuso nei termini classici, ciò non significa che non potrebbe essere perseguitata da coloro che dominano per mezzo del terrore, se loro sapessero della sua esistenza. Per cui, riassumendo, noi ripeteremo le precedenti valutazioni attorno la pianta e concorderemo nel dire che è uno psicotropo minore di ben meritata oscurità.

Ora di "mamma."

Mamma.**L'Alleata:**

Questa pianta ha il senso dello humour!!

La Pianta:

*salvia giardino verde
salvia amara amara
salvia compost
salvia fumo dolce
salvia sponda-del-fiume
salvia foglia-d'ombra
salvia foglie-crenate
salvia vieni-da-me
salvia dei desideri
salvia che sussurra
salvia guaritrice
salvia fuori di testa
salvia candela-al-vento
salvia nessuno lo sa*

L'Alleata:

Quando sei veramente appeso , quando stai ad un passo dal terrore e dall'autodistruzione, solo allora le foglie diventano più potenti e più precise. E, d'altra parte, per chi non stia cercando qualcosa, per chi cerca solo un divertimento, la pianta non è molto divertente. Al di fuori di una situazione "sacra" *la Pastora* ha sorprendentemente poco da offrire.

Non è una droga da spettacolo.

Veramente.**Storia:**

Sembra, probabilmente, che ska Pastora una volta fosse molto più diffusa di quanto lo è oggi. I cultigeni generalmente hanno storie lunghe, e Salvia divinorum non dovrebbe fare eccezione. Non è chiaro se il declino della pianta sia iniziato con la Conquista Spagnola o se già allora fosse in declino. Se è così le ragioni furono religiose, politiche o che altro'

Gordon Wasson ipotizzò che la Salvia divinorum fosse il **pipiltzintzintli**, il "Nobile Principe" menzionato nei codici Aztechi. Un problema per avvalorare concretamente quest'identificazione è che pipiltzintzintli sembra avesse varietà maschili e femminili, mentre ska Pastora è botanicamente parlando, perfetta. Gli Aztechi erano esperti botanici e conoscevano la differenza tra fiori maschi e fiori femmine. Ma può anche darsi che le referenze al genere siano state metaforiche, in relazione a proprietà non anatomiche della pianta. C'è qualche riferimento conosciuto a quest'uso del genere, così Wasson potrebbe aver ragione. Sarebbe straordinario se una pianta della statura e della potenza di ska Pastora non fosse ben conosciuta dagli Aztechi.

L'Alleata:

*Cercando la sorgente della musa, in qualche freddo canyon,
nel torrente impetuoso, in qualche coppa di sangue, pareti di canyon fatte di
carne, ritmi che pulsano nella notte--
la casa delle foglie, il loro nido che avvolge
l'anima: perfino la coscienza ha bisogno di un'anima. Le piante
hanno coscienza, ma non l'anima, per qualcuna di loro,
tutto questo non basta.*

Come vengono prese: il Sentiero di Foglie:

Sei, dieci o più foglie vanno masticate in un bolo e tenute a contatto delle guance . L'assorbimento avviene tramite la membrana orale. Esperimenti di Siebert (Siebert 1994) con il succo fogliare dimostrano in conclusione che la maggior parte, se non tutto, il potere delle foglie va perduto nello stomaco. Negli esperimenti di Siebert, chi ingoia immediatamente il succo e poi si risciacqua la bocca con acqua non prova nessun effetto enteogeno, mentre i membri del gruppo che teneva semplicemente il succo in bocca, senza ingoiarlo, andavano tutti soggetti ad un forte effetto.

Anch'io preferisco masticare e ingoiare, forse solo per una sensazione di pulizia e tradizione. Masticare con le guance piene mantiene il materiale in movimento e consente a tutte le parti della mucosa di stare costantemente a contatto con la foglia di salvia. Più di una volta ci è parso che fosse il picciolo (o la nervatura ?) questi stramasticati steli che alla fine mandavano tutto di traverso.

Un intrepido ricercatore ha chiamato Salvia divinorum "la pianta psichedelica con il gusto migliore che abbia mai assaggiato." Buona affermazione.

Effetti:

Gli effetti sono diversi, dipendono da quanta pianta si ingerisce, dipendono se incontri l'Alleata sul Sentiero di Foglie o attraversando il Ponte di Fumo. E anche se la pianta ti ha accettato. Il che è una metafora... o no? Quale spiegazione neurochimica si può dare ad una soglia che , una volta varcata, rimane aperta ancora per un anno, senza che intervenga nessun'altra esposizione alla pianta? E poi, le spiegazioni neurochimiche sono anch'esse metaforiche?

***La pianta si distilla da sola.
l'alambicco è il tuo corpo***

Fumare le foglie secche produce un effetto immediato. L'effetto dell'ingestione di materiale fresco, anche se più lento a salire, da' un'esperienza più profonda e più sostenibile, spesso con visualizzazioni sorprendentemente colorate. Bere il tè fatto con foglie secche può essere riconducibile ad entrambi i casi. (Salvinorin è praticamente insolubile in acqua. Il modo migliore di "ingerire" le foglie secche e quello di farle prima reidrattare con un po' di acqua calda, poi di tenerle in bocca allo stesso modo del materiale fresco.)

Nota che mentre il dosaggio per l'ingestione varia dalle 10 alle 30 foglie, la dose necessaria per il fumo è di 1 o 2 foglie.

***E' la vicinanza, la vicinanza senza cuciture . . .
talvolta è come se non facesse niente
del tutto, ma quante piante
non fanno nulla con questa chiarezza!***

La Pianta:

Si dice che la salvia del veggente possa crescere selvaggia in qualche parte quasi inaccessibile d'Oaxaca, ma non c'è nessuna conferma. Il suo popolo la cresce sotto le piante del caffè o lungo i ruscelli nei burroni. A quel che si dice non la crescono vicino alle loro case.

di notte, potrebbe avviluppare la casa . . .

La pianta è molto paziente.

L'Alleata:

Lei ha molte epifanie. Non tutte sono timide, e non tutte sono "lei." Una persona incontrò l'Alleata sotto forma di gigante (un gigante immensamente antico che indossava una cintura di teschi umani. Il gigante fissò direttamente negli occhi questa persona . Voleva sapere perché era stato evocato. E non voleva sentire una risposta banale.

La Pianta:

salvia tabella del cronometrista
salvia disegno cachemire
salvia sorprendente
salvia nastro di cotone
salvia vortice
salvia gufo
salvia che-muta-le forme
salvia pelle che cammina
salvia tu-chi-sei?
salvia qualcosa-si-sta-muovendo
salvia rimani serio
salvia guarda-siamo-usciti
salvia a-tuo-agio
salvia lei sta andando via di casa
salvia metate

Classe:
Existentia.

Ska Pastora non è un allucinogeno. Ciò non significa che non ne condivida alcune caratteristiche. Ma ci sono anche delle differenze. Gli allucinogeni veri agiscono tutti sui recettori 5-HT₂. Mentre i recettori della salvia del veggente non sono stati scoperti, l'evidenza sperimentale porta a qualche nuovo recettore o a qualche inondazione olografica della mente. E mentre molti allucinogeni possono aiutare qualcuno a giocare a golf (o, come Dock Ellis ha comprovato, per i lanci di qualche squadra di baseball), una certa mancanza di coordinazione muscolare accompagna l'inebriamento da salvia.

Sul mandala *Pharmako/Poeia*, ho inserito le piccole foglie nel tracciato tra *phantastica* e *inebriantia*, l'ho chiamato *existentia*. Con *existentia*, non intendo nulla di Cartesiano, e nemmeno nell'ordine di David Bohm, che implica la separazione-da-se, ma intendo ciò che deriva dall'essenza.

E' una cosa personale. Existenxia.
se puoi, fermati un attimo e pensaci.

***Salvia divinorum* è ciò che viene fuori incrociando un enteogeno con un ateo.**

Effetti:
Non è come l'essere sballati, è molto di più che l'essere pratici.

Corrispondenze:

Attività	Affari Domestici
Animali	Uroborus
Archetipo	Lettore della Fortuna
Forma Artistica	Poesia Lirica
Funzione Corporea	Circolazione
Parte del Corpo	Bocca
Reame del Buddha	Prajna Bhumi
Colore	Blu Cobalto

Entità Cosmica	Singularità
Sostegno per	Indecisione
Dimensione	Frattale
Disciplina	Augure
Elemento	Roba Mondana
Forma di Energia	Mulino a Vento
Forma di Ignoranza	Compiacenza
Pietra	Tormalina
Geometria	Topologia
Divinità	La Madre di Dio

La Pianta:

In tutta la nostra Pharmako/Poeia, questa pianta è la perla nascosta. I Poeti, al pari dei commercianti di vino, amano questo genere di sorprese, e le ricercano andando in esplorazione per cercare ancora, oltre i loro fratelli e sorelle meglio conosciuti: un poeta sconosciuto in un vecchio libro screpolato con luce nei suoi versi, un oscuro vino pregiato che mancava ai collezionisti, coperto di polvere ma pieno di sorsate deliziose. Le piccole foglie, nascondendosi nelle montagne, hanno con successo evitato la prima pagina per 4 secoli.

Un saggio Taoista, su un'altra catena montuosa, dopo molti anni di segreti studi alchemici con il suo maestro, sentendosi ormai completamente istruito, discese dalla montagna per muoversi nel mondo. Quando stava per sopraggiungere la sera, si fermò in una locanda. La gente che vi era ospitata si meravigliò della luce che sembrava si librasse da lui - una sorta di bagliore magico . Il saggio s'intristì rendendosi conto che i suoi studi erano compiuti solo per metà e ritornò immediatamente presso il suo maestro.

Visitare le *hojas de la Pastora* è come visitare un oracolo, e dovrebbero essere avvicinate con la stessa reverenza.

*Carovane d'oro, sfilano percorrendo il loro cammino
da Sardi a Delfi.*

Perché qualcuno dovrebbe aver voglia di consultare un oracolo? perché qualcuno dovrebbe cercare visioni? O è come parlare con un terapeuta, con un consigliere--- le foglie sono come un *kalyanamitra*, l'amico spirituale. possono raccontarti diverse cose.

o portarti a mangiare le parole.

E' difficile parlare.

Poesis:

Recenti studi di Aaron Reisfield (Reisfield 1993) dimostrano che *Salvia divinorum* non è completamente auto-sterile, come si pensava: la pianta può produrre semi fertili, sebbene molto di rado. Reisfield non trovò nessuna rilevante differenza nella produzione di semi fertili, comparando i fiori impollinati dallo stesso clone con quelli impollinati tra piante raccolte in differenti località Certo, è possibile che vi sia una piccola differenza genetica tra qualche specie di *S. divinorum*, perfino tra quelle che oggi crescono nelle aree selvagge in Oaxaca.

Le osservazioni di Reisfield suggerivano la forte possibilità che *Salvia divinorum* fosse un ibrido. I grani di polline di *Salvia divinorum* hanno perduto vitalità è un'indicazione di geni parentali disarmonici. Ma la bassa vitalità del polline è solo una causa. Perfino tramite ibridazione manuale soltanto il 2-3% dei semi matura. Aggravando ulteriormente il problema della riproduzione, in Mexico la pianta fiorisce solo sporadicamente. Per la fioritura sembra sia necessario più sole che per la crescita vegetativa ottimale, così riescono a fiorire solo le piante che crescono ai margini del loro habitat normale.

La barriera principale per la fertilità secondo Reisfield, compare dopo che il tubo pollinico ha raggiunto l'ovario. Ma egli non riuscì a stabilire se l'infertilità fosse dovuta a una depressione causata dall'ibridazione incrociata, condizione non infrequente tra le piante che hanno una lunga storia di relazioni con gli umani; ibridismo; o qualche effetto di azione ritardata per auto-incompatibilità. Se *Salvia divinorum* fosse veramente un ibrido, i genitori si sarebbero perduti da lungo tempo in una velenosa preistoria--Reisfield non conosce 2 salvie che potrebbero interagire per fornire le componenti morfologiche de *la Maria*.

E tu, se vuoi *ska Pastora*, dovrai fare nello stesso modo di quelli che l'hanno avuta negli ultimi duemila anni: avere una talea da qualcuno che la fa crescere.

Se il tuo getto è già radicato, o se vivi in un clima umido, puoi andare avanti e piantarla direttamente. Piantala all'ombra o dove il sole filtra un poco, le foglie non tollerano la piena luce solare--ho avuto piante che crescevano bene completamente all'ombra. Se vivi in un entroterra arido, dovrai spruzzare le foglie regolarmente o procurarti un impianto umidificatore. *Ska Pastora* ama il paese delle sequoie, dove c'è ombra e nebbia.

La pianta ti sarà grata se le darai del cibo. Ha bisogno di grandi quantità di acqua, ma stai attento ai marciumi radicali. Le piante deperiscono anche se si limita la crescita delle radici. proteggile dal gelo.

L'Alleata:

*Una volta che lo vedi, lo riconosci
Era là tutto il tempo, allora perché è
tutta una cosa
così grande? E perché
cerchiamo di dimenticarcelo?*

Corrispondenze:

<i>Dea</i>	<i>Isis</i>
<i>Grammatica</i>	<i>Mammifera Presintattica</i>
<i>Età storica</i>	<i>Futuro/Eon</i>
<i>Immagine</i>	<i>Labirinto, Sala di Specchi</i>
<i>Panorama</i>	<i>Giardino</i>
<i>Operatore logico</i>	<i>Identità</i>
<i>Macchina</i>	<i>Batiscafo</i>
<i>Metallo</i>	<i>Antimonio</i>
<i>Metafora</i>	<i>Contorni</i>
<i>Minerale</i>	<i>Turchese</i>
<i>Strumento musicale</i>	<i>Bull-Roarer</i>
<i>Mito</i>	<i>Universo parallelo</i>
<i>Numero</i>	<i>Complesso</i>
<i>Occupazione</i>	<i>Poeta/Profeta</i>
<i>Reame dell'incorporeo</i>	<i>Chiaroveggenza</i>
<i>Tavola periodica Col.</i>	<i>Terre rare</i>
<i>Fase della Materia</i>	<i>Nucleare Condensata</i>
<i>Filosofo</i>	<i>Anassimandro</i>

*Costante fisica**Pianeta**Veleno**Proporzione**Quark**Struttura eccellente Costante $\alpha=2\pi^2/hc$* *Luna**Terrore**Simmetria radiale**Nen, il Quantum del Tempo****Sulla Divinazione:***

Ho usato il Ponte di Fumo, facendo le carte. Avevo fumato molte volte, prima, ma questa fu realmente la prima volta che accadeva una cosa simile. Si aprì un abisso. La Storia si aprì Manipolando le carte con le mani sembrava facesse aumentare l'effetto. Le carte uscivano perfettamente. Ognuna rivelava dettagli e portava avanti la mia storia con un'unicità da farmi rizzare i capelli. Poi ricordai che Crowley aveva detto che bisognava arrivare a conoscere le carte come persone. Nell'istante in cui lo pensai, lasciai cadere l'ultima carta, lo sfondo di ciascuna divenne un buco nella tavola, sembrava una tomba aperta. Poi le piccole figure sulle carte si mossero un poco. Si muovevano liberamente e cominciarono a galleggiare quasi un pollice sopra la tavola. Stavano tutte in piedi, mi guardavano, aspettando che iniziassi a chiedere loro qualche cosa.

La specie ha il nome giusto.***L'Alleata:***

E' anti-fuga, l'opposto di scappare. E' improbabile che diventi popolare. Può essere empatogena, ma è più telepatica che emotiva. Accende l'anima di una persona: noi ascoltiamo/sappiamo quello che loro pensano realmente, quello che vogliono realmente, quello che loro hanno realmente fatto. E' ideale per un lavoro di coppia, per restare in contatto.

Sull'Oscurità

L'alleata ama l'oscurità La Luce può interrompere o addirittura sospendere anche stati molto cosmici e disincarnati, riportando senza scampo il postulante allo stadio mondano. Qualche volta è necessario accendere le luci per stare dietro a qualche cosa o a qualcuno, un bambino forse. Quello che è stupefacente è come lo spazio interdimensionale si riaffermi subito dopo che le luci sono di nuovo spente.

L'essenza del Percorso di Foglie : solo pochi amici che siedono in una stanza scura e forse bevono un poco di birra o tequila.. Qualcuno parla. Forse canta o salmodia. A quante persone quel suono va bene?

Che scherzo! Nessuno si meraviglia delle persone che non riescono a fermarsi dal ridere.

O forse l'oscurità non deve permettere agli altri di guardare dentro.

Può essere sempre stata una pianta da setta, qualche cosa di marginale.

La Maria è timida. Lei ha bisogno dell'oscurità per illuminare il Logo.

O forse la tradizione notturna deve evitare interazioni con ciò che non ha radice. L'Alleata porterà oltre i piccoli giochi sociali che sostengono la luce del giorno. Vedrai la rigidità ma qualche volta potresti non vedere l'importanza di giocare. Un'insistenza intransigente sull'assoluto potrebbe diventare subito maleducata.

Inoltre, di giorno hai un lavoro e hai delle opere da fare.

Effetti:

Olografici. Anche una quantità molto piccina di fumo può rivelare il panorama intero. Debolmente, per stare al sicuro, ma del tutto, è proprio lo stesso.

L'Alleato:

Non vi era nessun io, ma non c'era nemmeno nessun non-io.

La più Zen di qualsiasi pianta alleata, eccetto il riso.

Effetti:

Barcolli. Traballi. Ma non come l'ubriachezza: la mente è completamente chiara. L'effetto ricorda la kava.

Sui Logotipi:

Il veleno ha registrato la Parola. Parole divenute pietre miliari, una passerella galleggiante che consente di passare oltre i baratri.

Quello che siamo realmente è un tessuto di interconnessioni, la sommatoria di tutte le nostre relazioni, di tutte le persone che conosciamo e quelle che ancora dobbiamo incontrare. Non è che noi siamo nel tessuto, il tessuto quello che siamo. Suoni di vocali cambiano i colori; l'intonazione e il tono alterano la forma dello spazio che include; significati semantici creano la tessitura. Frasi divenute cose palpabili prendono forma visibile e tattile, volano o affondano.

Ma è tutto nell'occhio della mente, non nel bulbo oculare: un sogno lucido interattivo, accessibile alla volontà

Vidi da dove venivano i pensieri, visualmente. Alcuni si stavano appena formando --stavano bollendo in una specie di superficie liquida, alcuni di loro arrivarono e fiorirono, divennero persone e conversazioni. . .

Poesis:

Contrariamente al sapere scritto su Salvia divinorum, le foglie possono essere essiccate. Se coltivi la pianta, puoi avere abbastanza foglie per l'ingestione fresca solamente in estate e in autunno. Ho potato le mie piante nell'inverno--in caso di gelo. Ho avuto poco successo congelando le foglie, o estraendone il succo e gelandolo. Forse potrebbe funzionare. Penso che il succo sia più difficile da usare che le foglie.

Ma puoi asciugare le foglie, che è a cosa più facile da fare. Le foglie essiccate portano il fumo-alleato.

Effetti (rapporto sul campo: un uomo, inventore e pittore):

"C'erano cose che non mi avevi detto. Mi ci volle un po' per imparare come usarlo. Dovetti trovare la dose giusta. Subito me ne stavo prendendo troppo, sei o sette enormi boccate, da riempire i polmoni. Due o tre sono quasi giuste. "

"E' come un pesante zazen, come dopo un lunghissimo periodo di sedute, quello che gli puoi paragonare. Ha cambiato la mia vita, sì, ha svoltato la mia vita. Le cose stanno andando realmente bene. "

"E' molto intenso, lo chiamo una balbuzie di realtà o uno strobing di realtà Penso che l'essere stato pilota, e volare in quell'ambiente che non perdona, con solo i due piedi tra le ali, mi abbia aiutato a prepararmi per questo genere d'esplorazione. "

"C'è qualche cosa di molto pagano. Penso che non dovresti dirne niente a nessuno. Il Sesso è fantastico. Sensibilizza la pelle. E fa che ti venga voglia di esplorare. E il sonno e' grande, sto dormendo molto meglio. A. dice che le attenua i crampi mestruali. E anche il carattere."

La Pianta:

salvia in-controllo
 salvia fammi-commuovere
 salvia serpente-scorticato
 salvia oh-così-poco
 salvia mi-prendi-in-giro
 salvia naso-stretto
 salvia muso-di-donnola
 salvia striscio-su-di-te
 salvia cade-tutto-sopra di-te
 salvia amalo
 salvia continua-a.crescere

Effetti, (rapporto dal campo: un uomo, poeta e scrittore):

Ehi, all'improvviso quella roba è diventata forte! La usavo per scrivere, ma non posso più fare questo, è troppo forte. Ma mi aiuta per qualcuno dei miei affari: mi dice come trattare coi produttori che devo incontrare il giorno dopo. La fumo con la mia ragazza. Noi la chiamiamo "l'acrobata".

Effetti: (rapporto dal campo, un uomo , scultore):

Avevo sentito che sarebbe stata mite, così ne presi una bella boccata e la tenni nei polmoni, e stavo aspettandomi di doverne prendere molta di più per sentire solo un mite formicolio. Ma, subito, mi sommerse. Era così intenso, così immediato. Avevo visioni di un tunnel, non potevo vedere nient'altro che questo tunnel di fronte a me, come se stessi per svenire. Tutto mi avviluppava. Non mi piacque. Era troppo improvvisa, troppo paurosa. Ricordo di aver pensato che se qualcuno fosse entrato nella stanza non avrei potuto neanche parlare con loro. Non è sottile.

Effetti: (rapporto dal campo, una donna, pittrice e poeta):

"Fumai ogni paio giorni per due mesi. Odio dire questo riguardo ad una pianta, ma sono innamorata di lei. E' straordinaria. Ho dovuto provare sei o sette volte prima che accadesse qualcosa, quasi come se stesse tracciandosi dei sentieri o qualche cosa di simile.

la mia radicazione, la mia radicazione neurale. . .

Poi, d'improvviso, una gran botta, e voglio dire grande. Paurosa anche. E' proprio straordinario. E' così presente, in modo così chiaro. La mia vita è cambiata. Si è spostata incredibilmente, e a causa della pianta.

E' così grande quello che è stato, inequivocabile. Non era come uno sballo, è solo Mente E' così onesta! Mi sentivo come reclutata, come se mi fossi arruolata.

heh, heh, heh. . .

Ha a che fare con la specificità la differenziazione di forma. Ogni forma è riempita con la sua luminosità di dettaglio. E questo è vero anche emotivamente, nelle mie emozioni. Anche i giorni in mezzo alle volte in cui fumavo sentivo ancora di avere quest'accesso diretto. E' come la sensazione dopo un ritiro in meditazione, la sensazione post - sessione.

Voglio dire, forse sto esagerando su tutto questo. Forse era solo origano, ma lo chiamo "il mio ragazzo".

La Pianta:

salvia verde-paglia
 salvia diventare-pulito
 salvia un-soffio
 salvia pelle-sottile

salvia divenire-interiore
 salvia diventa-innamorato
 salvia ti-dice-che -ti-ama
 salvia non fare-l'asociale
 salvia vai-a-lavorare-in-tempo
 salvia pelle-di-lucertola
 salvia pelle-di-fumo
 salvia che-pensa-solo-a-crescere

Effetti:

Ti da' solo quello che sei. Dovunque sarai, questo è quello che si ottiene. Se tu sei nell'oscurità voli attraverso l'oscurità La luce e le facce che vedi sono le facce che porti sempre con te, le facce mentali, accese dal bagliore della mente. Se sei con chi ami, la pianta è un afrodisiaco.

L'Alleato:

Con le foglie non c'è un posto in cui nascondersi. Ecco perché è buona per trovare gli oggetti perduti o per identificare i ladri. E'un veleno che illumina il veleno: usala per trovare dove risiede il dis/agio.

Corrispondenze:

<i>Quantum Force</i>	<i>Y/Equazione a onda di Schringer</i>
<i>Regno di Piacere</i>	<i>Pelle</i>
<i>Evento Rituale</i>	<i>Nascita</i>
<i>Pietra</i>	<i>Ofiolite</i>
<i>Stagione</i>	<i>Samhain</i>
<i>Senso</i>	<i>Sesto</i>
<i>Posizione Sessuale</i>	<i>Forbici</i>
<i>Segno</i>	<i>Pegaso</i>
<i>Peccato</i>	<i>Lussuria</i>
<i>Evento Sociale</i>	<i>Esilio</i>
<i>Chiave dei Tarocchi</i>	<i>Luna</i>
<i>Tempo del Giorno</i>	<i>Mezzanotte</i>
<i>Attrezzo</i>	<i>Phurba</i>
<i>virtù</i>	<i>Temperanza</i>
<i>Vocale</i>	<i>Alta /u /Gutturale</i>

L'Alleato (rapporto dal campo, giorno):

Sembrava che diventasse sempre più forte finché lasciavo la cicca da masticare nella guancia. Ne sputai fuori circa un-terzo. Avevo un tempo sorprendente digitando al mio computer: era come la macchina da scrivere dal film "Il Pasto Nudo". M. mi guidò fino alla spiaggia. Mi sentivo abbastanza normale. Più tardi nel pomeriggio decidemmo di andare a un film, alle 5. Avevamo tempo prima del film e andai a zonzo in un negozio di libri usati. Un paio di libri di poesia era in mostra sulla mensola. Raccolta di Tagore. Com'era vuoto! Tutte quelle parole altisonanti ma senza nessuna sostanza. Aveva letto solamente, solamente pensato. Erano tutte bugie! Era così chiaro. Il libro accanto a lui era di A. E .Housman... Denso, ma legittimo. Era lì. Lei lo dimostrava tramite indizi.

Improvvisamente mi sentii completamente disorientato. Com'ero sciocco a restare in mezzo al pubblico. Come se potessi pensare

di maneggiarla andando a vedere un film? La domanda "Quanto sei "fatto"? E' insignificante. Non è lineare. Solamente la soglia era espressiva, e la soglia potrebbe essere così sottile!

Poesis:

Uno degli ingredienti attivi della Salvia divinorum , salvinorin, può essere estratto dalle foglie. Valdes, con il suo gruppo all'Università del Michigan isolò 1.2 grammi di salvinorin da 5.35 chilogrammi di foglie fresche che si asciugarono in 674 grammi di polvere macinata. Valdes non documentò con quante foglie aveva iniziato , ma le foglie che io scelgo pesano in media 2.3 grammi fresche, e asciugate sono circa 0.45 grammi. Questo significa tra 1,450 e 2,350 foglie per produrre 1,200 milligrammi di salvinorin, o tra 500 e 800 microgrammi di salvinorin per foglia. Sbriciolo molte foglie nella mia pipa, ma non fumo mai più di un quarto o un terzo del quantitativo, che è circa una foglia essiccata. Così in altri termini, salvinorin è attivo tra i 500 e gli 800 microgrammi, circa venti volte più attivo, per peso, che il DMT (la dimetiltryptamina).

Esperimenti quantitativi da Daniele Siebert, Jonathan Ott, me ed altri, da allora hanno confermato l'aritmetica.

Effetti, Salvinorin:

Esperienza di molte scene d'infanzia. I genitori possono essere rappresentati astrattamente. cambi di scena esageratamente veloci. Rivelazioni ontologiche.

Ho trovato un hardhead al salvinorin. Sotto mio controllo, l'uomo fumò attentamente e nel modo giusto un intero milligrammo di salvinorin, vaporizzato in una pipa di vetro. Dopo alcuni minuti lui scrollò le spalle, si alzò e, tentando di essere gentile, convenne che "forse c'erano dei visuals".

Poesis:

Tutte le informazioni necessarie per isolare salvinorin sono nei testi di Valdes (o, un diverso metodo, nelle carte d'Ortega). Anche se Ortega e Valdes riuscirono ad isolare salvinorin quantitativamente puro e cristallino, basterebbero estrazioni più semplici.

Ma tutto questo pone delle domande. Perché lo si fa? Sulla Crystal Highway l'alleato spesso mostra una faccia più dura, e più terrorizzante, che sul Sentiero o sul Ponte. Molti di quelli che incontrano l'alleato sulla Crystal Highway non desiderano più ripetere l'esperienza. L'alleato è sempre veloce, ma sulla Crystal Highway corre alla velocità della luce. E controllare il dosaggio a livello di microgrammi richiede molta abilità. La semplice foglia cruda sembra già così squisitamente bilanciata.

La pianta è legale; falla solo crescere. Puoi imparare qualche cosa. E' forte in abbondanza, sia nella sua forma fresca, sia essiccata. E' benevola in quella forma. Quando cominci a trafficare con molecole in microgrammi, con pipe di vetro, con overdose, vai probabilmente incontro a seri problemi di tossicità. E le foglie sacre della pastorella sono divenute una merce. E poi ci sono le considerazioni legali.

Il mio consiglio è quello di fare amicizia con la pianta. Se si vuole socializzare, considera il fumo della cannabis; se si vuole andare molto in alto, prova l'ossido nitroso o fuma DMT. Solamente se sei pronto a camminare con un alleato, tenta il Sentiero di Foglie o attraversa il Ponte di Fumo. Solo, non prendertela con me se ti arruolano gli esseri verdi, e sei diventato una pianta travestita con gambe invece di una persona.

Effetti, Salvinorin: La Crystal Road:

Pensavo di aver misurato 600 microgrammi. Più tardi accadde che una non trascurabile quantità di solvente evaporasse nel deposito, e che ciascuna goccia raddoppiasse in potenza.

La goccia veloce. Un trabocchetto. Come sul palco di una forca. Lo spaventoso terrore del vuoto assoluto.

La sua testa si lasciò cadere sulla tavola e le sue braccia penzolarono fuori. Le carte volarono tutte sopra di lui. Cadde giù dalla sedia, vasi e libri e un'altra sedia caddero con lui. Poi il suo corpo si contorse e lo vidi tramutarsi in un orso. Il suo corpo intero divenne teso. Un ringhio gutturale e profondo risuonò dalla sua gola e lui cominciò a parlare in altre lingue. I suoi occhi erano completamente fuori dalle orbite. Niente era

immaginario. Vidi la forza: due uomini non potevano tenerlo fermo, come se avesse corso l'amok.

Trance. Possessione. L'altro lato dello sciamanismo, attraverso quell'abisso terrorizzante: il suscitatore di forme. Là vivono pelli-che-camminano e lupi mannari.

Pensaci due volte prima di offrire una medicina della luna piena ad un evocatore di forme.

La Crystal Road: (rapporto dal campo, un uomo, artista):

Tutti degli universi paralleli erano là. La mia infanzia era là e la morte di mio figlio. Era terrore puro, tutto turbinava attraverso queste interruzioni del tempo, interruzioni che erano fatte di momenti. L'universo intero era sottosopra. Per poter ritornare doveti ritirarlo indietro attraverso il mio buco del culo.

Dovetti distruggere i mondi in cui non scelsi di esistere. E alcuni di loro tentarono di fermarmi dal farlo, cercarono di chiamarmi e mi dicevano di non farlo, che loro volevano esistere. Noi eravamo nel luogo in cui sei prima di nascere, e nel luogo dove vai dopo che sei morto. Una volta che esci fuori da un tempo, penetri in quello continuo, tutti gli spazi sono connessi.

Che esistessi era la cosa più sorprendente. La cosa intera era un'assurdità ma non potevo tornare indietro, a meno che non l'avessi accettata, tutta. Tutta la pena della mia vita stava aspettando là, la mia morte stava aspettando là, ma era come se dovessi scegliere, ci voleva uno sforzo. Dovevo accettare tutto questo per ritornare in quest'universo particolare.

Poesis:

Ortega produsse un estratto essiccato e macinato di foglie con cloroformio caldo. Isolò salvinorin dal residuo verde rimasto dopo avere evaporato il solvente con la colonna cromatografica. Usò la cromatografia dello strato sottile per esaminare il salvinorin nelle frazioni, e lo trovò nella sesta e settima delle tredici. I piatti di TLC furono sviluppati con il 10 % di acido fosfomolibdico in isopropanolo (acetato/esano dell'etile, 45:55 R_f=0.7). Cristallizza dal metanolo, punto di fusione 238-240°C.

Valdes estrasse con etere. Egli suddivise l'estratto essiccato tra esani e metanolo acqueo al 90 % , salvando i componenti polari nella frazione metanolica.

Un prodotto eccellente che chiamo 4x può essere preparato evaporando un'estrazione etanolica (o metanolica) delle foglie essiccate, e inzuppando il residuo oleoso rimasto dopo l'evaporazione, o dopo avere distillato il solvente, su foglie "pulite" inzuppate attraverso un filtro. Usai una quantità di foglia pulita circa uguale a un terzo del peso originale delle foglie estratte. L'arricchimento 4x è adatto per fumare in pipe piccole.

Ho provato anche il 10x. In questo caso, lava via ,con esani, il composto non-polare dal residuo, più o meno come delineato da Valdes. Controlla i tuoi pesi.

Etnobotanica:

Il Tè fatto con quattro o cinque paia di foglie è medicinale. I Mazatechi usano il tè contro il mal di testa e i reumatismi. Si dice anche che sia buono per l'anemia e i problemi delle funzioni uriche.

La Pianta:

Le foglie della luna. Per nessun'altra pianta la preparazione e le condizioni del terreno sono così cruciali. Ska Pastora è la pianta dei dottori della luna. Potrebbe tipizzare la medicina lunare, tutta da sola, la sua luce è così pallida e bianca. La medicina lunare non serve per evitare il disastro, com'è il caso, qualche volta, quando ci si trova nel genere phantastica, ma per sentire le parole, comprendere la presentazione. "Solo questo" non è proprio la stessa cosa di "come, soltanto questo".

Lei ti porterà a quello che sei e correrà via con questo , più veloce di qualsiasi altra pianta che conosco.

Effetti:

La parola incredibile viene molto usata.

Come va Presa: linea di base:

Cresci abbastanza foglie da averne da undici a ventidue, da trenta a sessanta grammi, per ciascuna persona. E' tradizione averne un fascio in più a portata di mano, da usare come "elevatore" per quelli che desiderano ritornare alla trance dopo il loro viaggio iniziale.

Metti le foglie in modo che i gambi abbiano tutti la medesima faccia nella stessa direzione. Mettile sull'altare. Brucia un piccolo incenso. Fai questo in una stanza comoda, con cuscini, preferibilmente una che può essere completamente oscurata. In città una stuoia su una finestra terrà lontano le luci della strada e così via. Comincia appena fa buio.

A luce di candela, rotola il tuo fascio di foglie in forma di sigaro e mastica finché è andato, o finché non trovi più la tua bocca. O fino a che... Mastica bene. Se non vuoi ingoiare, o non vuoi ingoiarlo tutto, procura un bel piatto per ciascuna persona o metti a disposizione un cesto per ricevere la cicca da masticare esaurita. Ma bisogna masticare la cosa a lungo e bene. Poi spegni la candela. Accettala. Pulisciti il palato con della tequila, o un po' di birra.

I tuoi occhi sono aperti o chiusi? Sei sicuro?

Dopo circa quarantacinque minuti, se non hai finto tutte le tue foglie, mangia il resto. O mangia sei o dodici foglie nuove, se sei propenso. Salmodiare e cantare sono adatti, come lo è il tabacco. E' più facile tenere le foglie giù se hai digiunato mezza giornata prima della velada. Mangia dopo: a mezzanotte o nelle vicinanze.

Meglio non guidare, ma, se devi, **mai** prima di aver mangiato. Vanno bene le zuppe, e la frutta.

Ricorda: i tuoi amici, l'oscurità, l'adunata e il masticare sono parti di un tutto che integra l'intera esperienza, ed è stato così per molti, molti secoli. Gli antenati di due regni ti attendono.

L'Alleato:

***Qualche volta salvia bisbiglia, qualche volta grida.
Qualche volta ti dice di cantare, qualche volta
prende la tua voce, cammina via e ti lascia
radicato, senz'occhi, e col genere di voce
che ha una pianta.***

La Pianta:

Entusiasmo. Entheos.

La pianta degli dei, portata fra.

***La planta de los dioses.
La planta amada de los dioses.***

La pianta saggia, la pianta salva
la pianta del Savio.

***La planta Sabia .
La salvia de las adivinas.
La salvia Sabia.***

Noi diamo il benvenuto alla pianta.

*La planta que salva.
La Salvadora de los sabios.*

Noi non siamo differenti dalla pianta.
Siamo noi che dobbiamo salvare gli dei.
Siamo noi che dobbiamo diventare divini.

Somos nosotros que debemos que ser adivinos.

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A Method for Using *Salvia divinorum* as an Oracle

by "Sage Student"

(This site is created and maintained by [Daniel Siebert](#))

Many people who have used Salvia feel they have learned valuable lessons from it. Often these lessons occurred accidentally. However some people deliberately consult Salvia as an "oracle" to get advise, or insight, regarding specific problems. Undoubtedly, there are many ways to do this.

The following is a detailed description of one such method. It is a modern method, which differs from the traditional Mazatec method (on which it ultimately is based). It is stated as an algorithm—an operational procedure spelled out clearly—so that you can follow the steps outlined, to see if they work for you.

Although you need not hold particular beliefs to use this method, serious intent is necessary. Needing to make an important decision is an essential precondition for consulting Salvia-As-Oracle. So wait until you have an important problem confronting you before testing this algorithm. If you consult Salvia about something trivial you should not expect much.

As used here, *oracle* does not mean "a fortune telling method". Instead, it means "a way of discovering important insights by means other than just reasoning". Consulting Salvia typically involves encountering the non-rational. But, in the method outlined here, conscious sober reasoning is required before consulting Salvia. Think of it as doing your share of the work.

ARE YOU READY TO MEET THE ORACLE?

You can use this checklist to see if you are ready. If all these statements fit, you probably are.

- 1.) You have an important decision confronting you, but are not clear what to do.
- 2.) You have taken time to think the issues through carefully while sober.
- 3.) You want to see the issues in a new light, and to clarify issues involved.
- 4.) You have the courage needed to confront the mysterious and unsettling.

METHOD

Materials Needed:

- Salvia (preferably to be taken as chewed quid, swallowed infusion, or sublingual soft extract, rather than smoked or vaporized).
- A notebook and pencil (or a tape recorder).

Setting required:

- Time free of interruptions. Put the dog out. Turn off the phone. No visitors.
- Safe semi-darkened (or totally darkened) room, with a couch or bed to lie on. Some outdoor settings may work well, if safe and private.
- Any sitter present should have worked with Salvia themselves. They should be instructed by you in what you want them to do or say, and how active you wish them to be. Clarify whether they will take notes, touch you, speak to you etc.

PROCEDURE

Follow these six steps in order. Do not skip any.

Step 1: While sober, think the issue through as logically as possible. Be businesslike, and as honest with yourself as you can be. You may have already done this. If so, do it again. Consider options. Consider consequences. Consider values. Take your time doing this thoroughly. You will be laying a foundation without which Salvia cannot work.

Step 2: Take Salvia. You don't need the strongest trip possible to get meaningful answers. Avoid the "macho ingestion syndrome". It will most likely interfere with your using Salvia as an oracle.

Step 3: While chewing the quid, and afterwards, lie down, thinking about the decision confronting you. Frame it as a question, or as a request to Salvia, to help you evaluate options and consequences, both for you, and for others. Do not ask Salvia to help you discover unknown facts, but rather to help you see inter-relationships and possibilities that you are unaware of.

Step 4: Still holding the question in mind, open yourself to the reality-bending force of Salvia. This is when Salvia may help you reframe everything. As you learn the lesson put it into simple words that you will be able to remember later. This putting into words is VERY important. Speak them to your sitter, speak them into a tape recorder, or tell them to yourself out loud, or sub-vocally. If you don't put your insights into words at this stage, you may forget the whole lesson.

Step 5: While the trip is wearing off, keep the lesson you learned firmly in mind. Focus on the simple words you spoke in step 4. Focusing on Salvia's message throughout the transition phase will help you later recall it once sober. If you can do so at this stage, expand your thoughts about this message and write them down to refer to later, or speak them into a tape recorder.

Step 6: When sober review your notes. And think about the issue yet again, this time applying whatever lessons you've learned while "besaged". Clearly formulating your thoughts in writing is very helpful for clarifying everything post-Salvia. Do this soon after the inebriating effect of Salvia wears off. As with working with dreams, the longer you wait the more you will forget.

RESULTS

Results will vary. But you might be surprised at how your decision has been reframed.

ORACOLO (traduzione)

Il nome SALVIA DIVINORUM -"Salvia dell'indovino " – ci porta alla domanda: "Che cosa è la DIVINAZIONE e cosa c'entra con questa pianta? ". La definizione comune di DIVINATION (divinazione), dal dizionario inglese, è (parzialmente):

" l'arte o l'atto di predire eventi futuri o palesare conoscenze occulte mediante Auguri o consultando gli agenti soprannaturali."

Penso che il termine "DIVINATION" , com'è solitamente concepito - *raccontare la fortuna o scoprire fatti nascosti* - **non** sia il termine appropriato per quello che la SALVIA ci permette che accada, ma SALVIA è molto adatta per essere utilizzata come oracolo. Proverò a spiegare.

Il mio utilizzo della parola "ORACLE (oracolo) è piuttosto differente dalle comuni definizioni del dizionario, benché esso ne comprenda la maggior parte degli esempi. Per oracolo io intendo:

*" qualsiasi procedura per cercare od imparare saggezza, avvisi, o profonde intuizioni in una data situazione, con **altri** significati rispetto al ragionamento consapevole, l'osservazione o l'esperimento **sobrio** "*

Come vedrai più avanti, io credo che, per usare SALVIA quale oracolo, sia essenziale un periodo preliminare di consapevole ragionamento sobrio, prima di prendere la SALVIA.

Essenza della scienza è descrivere i tuoi esperimenti in modo tale che anche altri li possano riprodurre/ripetere, e vedere se le tue argomentazioni sono valide. Nello spirito del nostro tentativo di studio collettivo della SALVIA – al fine di sviluppare una scienza "SOFT" (facile) di SALVIA, com'era un tempo , ho scritto questo algoritmo, affinché altri lo possano verificare, e vedere se funziona altrettanto bene per loro.

Non c'è niente di molto arcano in questo, se non per ciò che accade mentre sei "BESAGED" [essere nel regno della salvia]. Questo sì che è un arcano.

Attendi finché non hai una decisione importante da affrontare prima di collaudare quest'algoritmo. Richiede un serio intento. Dato che avere una seria decisione da prendere è una premessa essenziale, la sua mancanza rende impossibile usare SALVIA-come-ORACOLO.

Premesse per l'uso di SALVIA come oracolo.

Puoi usare quest'elenco di controllo per vedere se sei pronto per consultare l'oracolo.

- a) Una decisione importante da affrontare di cui tu sia incerto. Se consulti SALVIA per qualcosa di triviale non otterrai nulla di buono/valido.

- b) Un sincero intento nel pensare attentamente al problema, mentre sei sobrio
- c) Un forte desiderio di vedere il problema in un modo differente, e di chiarire i problemi coinvolti
- d) Il coraggio di guardare in faccia l'abisso senza indietreggiare molto quando anche lui guarda in faccia te.

Usare SALVIA come oracolo:

Il metodo

1. Mentre sei sobrio pensa al problema più logicamente che puoi. Impegnati e sii tanto onesto con te stesso quanto puoi essere. Considera le possibilità. Considera le conseguenze. Considera i valori. Prenditi tutto il tempo per farlo accuratamente. Stai gettando una base senza la quale SALVIA non può lavorare.
2. Prendi la SALVIA. Penso che masticare un QUID (una 'cicca'), mentre stai disteso in una quieta camera buia, sia il modo migliore. Non hai bisogno necessariamente del trip più forte possibile per avere efficaci risposte. Evita la SINDROME da MACHO-INGESTION; probabilmente disturberà il tuo uso della SALVIA come oracolo.
3. Mentre mastichi il QUID, e sei sdraiato, pensa alla decisione da prendere. Formulala come una domanda, o una richiesta, a SALVIA per aiutarti a valutare le possibilità e le conseguenze, sia per te sia per altri. Non chiedere a SALVIA di aiutarti a scoprire fatti ignoti, quanto di aiutarti a vedere le INTERRELAZIONI che tu ignori. SALVIA adesso può costruire sulla base del passo 1.
4. Tenendo ancora in mente la domanda, apriti alla forza di SALVIA che piega la realtà ai propri voleri. È adesso che SALVIA ti può aiutare ad incorniciare di nuovo tutto; appena apprendi la lezione mettila giù nelle parole + semplici per poterla ricordare più tardi. Questo mettere in parole è molto importante. Se non fai questo puoi dimenticarti tutta la lezione.

Passo 5. Mentre il trip sta finendo conserva concretamente in mente la lezione che hai imparato. Questa sua focalizzazione nella fase di transizione, più tardi ti sarà d'aiuto per richiamarla alla mente - da sobrio. Se puoi, usa la scrittura per rivedere tutto più tardi.

Passo 6. Quando sei sobrio pensa nuovamente al problema, questa volta applicando qualsiasi lezione tu abbia imparato mentre eri BESAGED. Formulare chiaramente i tuoi pensieri nella scrittura è molto utile per chiarire tutta questa fase.

Potrai rimanere molto meravigliato al modo in cui verrà ridimensionata la tua decisione da questa procedura.

A me pare - ammesso che SALVIA voglia veramente qualche cosa - che lei possa volere che noi la usiamo in questo modo.

Quanto corrisponde tutto ciò all'uso tradizionale? Forse qualche profondo conoscitore delle tradizioni sciamaniche Mazateche lo potrà raccontare.

Così, SALVIA può essere usata come un oracolo; non per farsi raccontare la fortuna, (predire il futuro) ma per farsi chiarire relazioni e contingenze.

Non per scoprire nuovi fatti, ma per "divinare" i rapporti d'interrelazione che noi avevamo perso di vista. I rapporti d'interrelazione e le loro conseguenze implicano le nostre scelte esistenziali.

Per venire a nuove conclusioni.

A "divinare" i sentieri nascosti nel deserto.

Può non essere soprannaturale, ma se consulti SALVIA-come-ORACOLO sii preparato ad avere la tua autostima completamente messa sottosopra.

Questa è roba seria.

(NB:-per suo espresso desiderio non viene citato l'autore di questo testo)



Current Moon Phase

Go [here](#) to return to The *Salvia divinorum* Research and Information Center

This site is created and maintained by [Daniel Siebert](#)

2001 Phases of the Moon

NEW MOON				FIRST QUARTER				FULL MOON				LAST QUARTER			
	d	h	m		d	h	m		d	h	m		d	h	m
JAN.	24	13	07	JAN.	2	22	31	JAN.	9	20	24	JAN.	16	12	35
FEB.	23	8	21	FEB.	1	14	02	FEB.	8	7	12	FEB.	15	3	23
MAR.	25	1	21	MAR.	3	2	03	MAR.	9	17	23	MAR.	16	20	45
APR.	23	15	26	APR.	1	10	49	APR.	8	3	22	APR.	15	15	31
MAY	23	2	46	APR.	30	17	08	MAY	7	13	53	MAY	15	10	11
JUNE	21	11	58	MAY	29	22	09	JUNE	6	1	39	JUNE	14	3	28
JULY	20	19	44	JUNE	28	3	20	JULY	5	15	04	JULY	13	18	45
AUG.	19	2	55	JULY	27	10	08	AUG.	4	5	56	AUG.	12	7	53
SEPT.	17	10	27	AUG.	25	19	55	SEPT.	2	21	43	SEPT.	10	18	59
OCT.	16	19	23	SEPT.	24	9	31	OCT.	2	13	49	OCT.	10	4	20
NOV.	15	6	40	OCT.	24	2	58	NOV.	1	5	41	NOV.	8	12	21
DEC.	14	20	47	NOV.	22	23	21	NOV.	30	20	49	DEC.	7	19	52
				DEC.	22	20	56	DEC.	30	10	40				

In the tables above and below, d, h, m indicate day, hour, minute, respectively, in "Universal Coordinated Time" (abbreviated UTC). To adjust for your particular time zone, first determine how many hours ahead or behind of UTC your time zone is, and then make the corresponding adjustment to the times shown above. Go [here](#) to determine the current UTC and find you relationship to it.

Please visit [The U. S. Naval Observatory](http://www.usno.navy.mil/USNO/skyData/moonData/moonData.html) for information on the following:

Eclipses

Equinoxes, Solstices, Perihelion, and Aphelion

Moon Illumination

Phases of the Moon

Sunrise, Sunset, Moonrise, Moonset, and Twilight

Moon phase tables for upcoming years are shown below.

2002 Phases of the Moon

NEW MOON				FIRST QUARTER				FULL MOON				LAST QUARTER			
d	h	m		d	h	m		d	h	m		d	h	m	
JAN.	13	13	29	JAN.	21	17	46	JAN.	28	22	50	JAN.	6	3	55
FEB.	12	7	41	FEB.	20	12	02	FEB.	27	9	17	FEB.	4	13	33
MAR.	14	2	02	MAR.	22	2	28	MAR.	28	18	25	MAR.	6	1	24
APR.	12	19	21	APR.	20	12	48	APR.	27	3	00	APR.	4	15	29
MAY	12	10	45	MAY	19	19	42	MAY	26	11	51	MAY	4	7	16
JUNE	10	23	46	JUNE	18	0	29	JUNE	24	21	42	JUNE	3	0	05
JULY	10	10	26	JULY	17	4	47	JULY	24	9	07	JULY	2	17	19
AUG.	8	19	15	AUG.	15	10	12	AUG.	22	22	29	AUG.	1	10	22
SEPT.	7	3	10	SEPT.	13	18	08	SEPT.	21	13	59	SEPT.	31	2	31
OCT.	6	11	17	OCT.	13	5	33	OCT.	21	7	20	SEPT.	29	17	03
NOV.	4	20	34	NOV.	11	20	52	NOV.	20	1	34	OCT.	29	5	28
DEC.	4	7	34	DEC.	11	15	48	DEC.	19	19	10	NOV.	27	15	46
												DEC.	27	0	31

2003 Phases of the Moon

NEW MOON				FIRST QUARTER				FULL MOON				LAST QUARTER			
d	h	m		d	h	m		d	h	m		d	h	m	
JAN.	2	20	23	JAN.	10	13	15	JAN.	18	10	48	JAN.	25	8	33
FEB.	1	10	48	FEB.	9	11	11	FEB.	16	23	51	FEB.	23	16	46
MAR.	3	2	35	MAR.	11	7	15	MAR.	18	10	34	MAR.	25	1	51
APR.	1	19	19	APR.	9	23	40	APR.	16	19	36	APR.	23	12	18
MAY	1	12	15	MAY	9	11	53	MAY	16	3	36	MAY	23	0	31
MAY	31	4	20	JUNE	7	20	28	JUNE	14	11	16	JUNE	21	14	45
JUNE	29	18	39	JULY	7	2	32	JULY	13	19	21	JULY	21	7	01
JULY	29	6	53	AUG.	5	7	28	AUG.	12	4	48	AUG.	20	0	48
AUG.	27	17	26	SEPT.	3	12	34	SEPT.	10	16	36	SEPT.	18	19	03
SEPT.	26	3	09	OCT.	2	19	09	OCT.	10	7	27	OCT.	18	12	31
OCT.	25	12	50	NOV.	1	4	24	NOV.	9	1	13	NOV.	17	4	15
NOV.	23	22	59	NOV.	30	17	16	DEC.	8	20	37	DEC.	16	17	42
				DEC.	23	9	43	DEC.	30	10	03				

2004 Phases of the Moon

NEW MOON				FIRST QUARTER				FULL MOON				LAST QUARTER			
d	h	m		d	h	m		d	h	m		d	h	m	
								JAN.	7	15	40	JAN.	15	4	46
JAN.	21	21	05	JAN.	29	6	03	FEB.	6	8	47	FEB.	13	13	39
FEB.	20	9	18	FEB.	28	3	24	MAR.	6	23	14	MAR.	13	21	01
MAR.	20	22	41	MAR.	28	23	48	APR.	5	11	03	APR.	12	3	46
APR.	19	13	21	APR.	27	17	32	MAY	4	20	33	MAY	11	11	04
MAY	19	4	52	MAY	27	7	57	JUNE	3	4	20	JUNE	9	20	02
JUNE	17	20	27	JUNE	25	19	08	JULY	2	11	09	JULY	9	7	33
JULY	17	11	24	JULY	25	3	37	JULY	31	18	05	AUG.	7	22	01
AUG.	16	1	24	AUG.	23	10	12	AUG.	30	2	22	SEPT.	6	15	10
SEPT.	14	14	29	SEPT.	21	15	53	SEPT.	28	13	09	OCT.	6	10	12
OCT.	14	2	48	OCT.	20	21	59	OCT.	28	3	07	NOV.	5	5	53
NOV.	12	14	27	NOV.	19	5	50	NOV.	26	20	07	DEC.	5	0	53
	DEC.	12	1	29		DEC.	18	16	39		DEC.	26	15	06	

2005 Phases of the Moon

NEW MOON				FIRST QUARTER				FULL MOON				LAST QUARTER			
d	h	m		d	h	m		d	h	m		d	h	m	
JAN.	10	12	03	JAN.	17	6	57	JAN.	25	10	32	JAN.	3	17	46
FEB.	8	22	28	FEB.	16	0	16	FEB.	24	4	54	FEB.	2	7	27
MAR.	10	9	10	MAR.	17	19	19	MAR.	25	20	58	MAR.	3	17	36
APR.	8	20	32	APR.	16	14	37	APR.	24	10	06	APR.	2	0	50
MAY	8	8	45	MAY	16	8	56	MAY	23	20	18	MAY	1	6	24
JUNE	6	21	55	JUNE	15	1	22	JUNE	22	4	14	JUNE	30	11	47
JULY	6	12	02	JULY	14	15	20	JULY	21	11	00	JULY	28	18	23
AUG.	5	3	05	AUG.	13	2	38	AUG.	19	17	53	AUG.	28	3	19
SEPT.	3	18	45	SEPT.	11	11	37	SEPT.	18	2	01	SEPT.	26	15	18
OCT.	3	10	28	OCT.	10	19	01	OCT.	17	12	14	OCT.	25	6	41
NOV.	2	1	24	NOV.	9	1	57	NOV.	16	0	57	OCT.	25	1	17
DEC.	1	15	01	NOV.	8	9	36	NOV.	15	16	15	NOV.	23	22	11
				DEC.	31	3	12	DEC.	23	19	36	DEC.	23	19	36

Salvia Divinorum Inspired Arts

If you would add your *Salvia divinorum* inspired work to this collection, please send me a note at:
dsiebert@gte.net

Visual Arts

-  [Salviascape](#). An image reminiscent of salvia-accessed dimension. By Steven Rooke.
-  [Salvia inspired tiles](#). By Belaqua.
-  [Salvia and Her Sisters](#). A painting by an unknown artist.
-  [Salvinorimagination](#). A digital collage by Vando.
-  [Salvia Ghost](#) and [Salvia #2](#). Complex fractal images by Jon Stoppard. You can also hear Jon's [music](#).
-  [Endoreal Visions](#) and [Untitled](#). Salvia inspired drawings and paintings by Cristovao Neto.
-  [The Separation of Consciousness from the Body's Shell in Form of a Rowboat Exiting the Face Backwards](#). by Jerome Veith.
-  [Magmamouth](#), [The Messenger](#) and [Rik on Salvia](#). Extraordinary *Salvia divinorum* inspired artwork by Gwyllm.
-  [Salvia divinorum inspired artwork silk-screened onto T-shirts](#). From RowanTree Arts.

Poetry

 [The *Salvia divinorum* chapter of "Pharmako/poeia."](#) By Dale Pendell. (Also available in an [Italian](#) translation).

 [Where she takes me.](#) by Laura McCarthy.

 [The Divine Goddess.](#) by Laura McCarthy.

 [Wanton Desire.](#) A Sage Goddess inspired poem by Will Penna.

 [Salvia Odyssey.](#) By Sage Student.

 [Salvia divinorum Anagram Poem.](#) By Sage Student.

 [The Other Voice.](#) By Ramiro.

 [To Saint Agape Divinorum.](#) Dedicated to the Guide who's toes are *Salvia divinorum*. By Paradama Purusha.

Audio Arts

 [Divinorum](#) is a one-man music project by producer Bjorn Lynne. The music of Divinorum is trance, deep-trance, space-trance and goa-trance with a big and lush sound. It is equally suitable for the dance floor as just sitting back and enjoying the trip.

 [Ska Pastora.](#) A composition by jhno.

 [Lady Salvia.](#) A composition by Baanzi (in RealAudio). Go [here](#) for the MP3-Streaming version.

 [Salvia divinorum.](#) A composition by Turgut.

 [Press the Button.](#) *Salvia divinorum* influenced audio art on the air (radio). [Audio files.](#)



Sagewise

(This site is created and maintained by [Daniel Siebert](#))

This is a closed-membership email-based discussion forum for *Salvia divinorum* researchers and professionals. The list is moderated and maintained by Daniel Siebert. This is a scientifically oriented and intellectually focused community of educated, mature people. Membership is on an invitation only basis. If you are doing serious research or are involved with *Salvia divinorum* in a professional capacity and would like to join this discussion forum, please send me a brief bio and tell me something about your work in this area. my email address is: dsiebert@gte.net

Other *Salvia divinorum* discussion forums

Section XV of [The *Salvia divinorum* FAQ](#) lists several open-membership *Salvia divinorum* discussion forums. Some are email lists and some are web-based message boards.

Clones of *Salvia divinorum*

[The *Salvia divinorum* Research and Information Center](#)

is created and maintained by

[Daniel Siebert](#)

Most of the clones described below can be obtained from: [The Sage Wisdom Salvia Shop](#).

Seed raised clones:

Seed raised plants are valuable because they are genetically unique. Unfortunately, *Salvia divinorum* seeds are extremely rare. For reasons not entirely understood, this plant almost never sets seed. Botanists have never found seed on plants growing in their native habitat. The first published description of *S. divinorum* seed was that of L.J. Valdés. He had managed to produce seed by carefully hand-pollinating greenhouse grown plants; unfortunately those seed failed to germinate. A.S. Reisfield was the next person to report successful seed production. Many of the seeds he obtained germinated, but the plants were not maintained.

In 1994, while examining a collection of *S. divinorum* (Wasson/Hofmann clone) growing at a friend's property in Hawaii, I was fortunate enough to discover seventy seeds. This is first documented instance in which *S. divinorum* plants are known to have spontaneously produced seed. This was the only time that seed had been found on these particular plants. They had been checked in previous years and have been checked many times since. It is unclear why they only produced seed this one particular year. Despite the most careful attention, only thirteen seeds germinated. The seedlings all started out growing very weakly and seven died off at a very small size. The six remaining plants are now growing well.

Recently, in 1999 a commercial *S. divinorum* grower in Hawaii discovered seeds on his plants. Although he had been experimenting with hand-pollination, most of the seed he obtained came from plants that he had not hand-pollinated. Apparently they had been pollinated by insects. Many of the seeds germinated, but many of the seedlings were weak and did not survive. The ones that did are growing normally. Two of these were raised by myself from seed that the grower kindly shared with me.

The following is a list of the seed-raised clones in my collection:

Seed parents = "Wasson/Hofmann"

Echo (DS9401 - Siebert 1994 seed raised clone)

Oracle (DS9402 - Siebert 1994 seed raised clone)

Paradox (DS9403 - Siebert 1994 seed raised clone)

Enigma (DS9404 - Siebert 1994 seed raised clone)

Mystique (DS9405 - Siebert 1994 seed raised clone)

Sacred Spring (DS9408 - Siebert 1994 seed raised clone)

Seed parents = "Palatable"

Hanau (DS9903 - Siebert 1999 seed raised clone)

Maka (DS9904 - Siebert 1999 seed raised clone)

Vegetatively propagated clones - collected in the Sierra Mazateca:

Wasson/Hofmann (Collected by Wasson and Hofmann)

Cerro Quemado (Collected by L.J. Valdés III)

Palatable (Collected by Bret Blosser)

Bret Blosser #2 (Collected by Bret Blosser)

Catalina (KH96 - Collected by Kathleen Harrison July 1996)

Delicious (DS9901 - Collected by Daniel Siebert February 11, 1999)

Julietta (DS9902 - Collected by Daniel Siebert February 14, 1999)

Distinctive clones:

Luna (syn. DS9401L)

This is an unusual clone that I discovered growing in a patch of the "Wasson/Hofmann" clone. It is either a sport of the "Wasson/Hofmann" clone that sprung up from the base of the surrounding plants, or it may have originated from a seed that fell from the neighboring plants. Given that it is extremely rare for *Salvia divinorum* to produce viable seeds and that any seedlings produced tend to be very weak, it is most likely that this is actually a sport, possibly some type of polyploid. The leaf morphology is distinctive. The margin is more deeply serrated and the leaf is more roundish than ovate. Go [here](#) to see a picture of Luna.

Appaloosa

This is a variegated clone that was discovered by "Sage Student" in 1999. It originated as a sport on an otherwise normal specimen in his collection. The clonal identity of the plant that produced it is unknown because it was purchased from a source that did not identify it (most likely it was the Wasson/Hofmann clone). The cause of the variegation has not been positively identified. It is probably a chimera (an individual containing genetically different tissues) that resulted from a somatic mutation. It does not appear to be caused by a pathological condition. The leaves are marked with patchy white or pale-green areas and the stems have white striping. The amount of variegation is quite variable: some leaves are heavily variegated, while others appear completely normal. Growth of the pigment-free cells is stunted, causing leaf and stem deformations. "Sage Student" describes how this clone was nearly destroyed soon after it was discovered:

The original plant was nearly destroyed, because when I first noticed it I thought it was diseased. Fearing it would infect my healthy *Salvia* plants, I hurled it into the woods to die far away from my healthy *Salvias*. But I then had second thoughts about what I had done, and realized it might not be sick after all but could be a rare mutant worth saving. I had to crawl on hands and knees through poison ivy to retrieve it!

Paradox

This is one of the seed-raised clones mentioned above. Of all of the seed-raised clones I have seen, this is the only one that is visibly unique. The leaves have a slightly mottled appearance.

Lost clones:

Valdés collected three different clones. unfortunately due to labeling mix-ups and some plant losses the only one that we are certain still exists in cultivation is his collection from Cerro Quemado (see above).

A.S. Reisfield, author of "The Botany of Salvia divinorum", collected several specimens in Oaxaca, and also managed to produce viable seed from which he raised several plants. These plants were left in the care of the horticultural staff at "The University of Wisconsin" where they all died off. It is always possible that someone out there propagated some of these lost clones in which case they may still exist in some private collections. Perhaps some of these will show up again in the future.

Qualities of different clones:

Potency:

John Grubber did HPLC on "Luna" (syn. Siebert 9401) and 5 of the 6 seed raised clones. Only one sample of each was looked at, so the results are statistically rather meaningless. It is clear that the salvinorin A concentration of a given clone can vary quite a bit. Grubber checked 4 samples of "Wasson/Hofmann" and reported the following salvinorin A concentrations: 1.93, 2.75, 2.86 & 3.87 mg/g. He also checked 4 of "Palatable" and reported the following salvinorin A concentrations: 0.86, 0.89, 2.33 & 2.85 mg/g.

Bitterness:

The bitter taste of *S. divinorum* is primarily due to the presence of water soluble tannins in the leaves. Apparently the concentration of the bitter elements varies within the plant in much the same way as does salvinorin A. Therefore, any particular clone can vary in degree of bitterness. I have observed that my plants produce significantly less-bitter leaves during the spring, when they are growing particularly rapidly. I have not noticed any significant difference in bitterness between clones, including the so called "Palatable" clone. Note: The clone named "Delicious" describes a delicious experience, not a delicious flavor.

Vigor:

Some clones do seem to grow more vigorously than others. Some particularly strong growers are: "Wasson/Hofmann", "Palatable", "Luna", "Delicious", "Catalina", "Cerro Quemado", and "Sacred Spring."

Appearance:

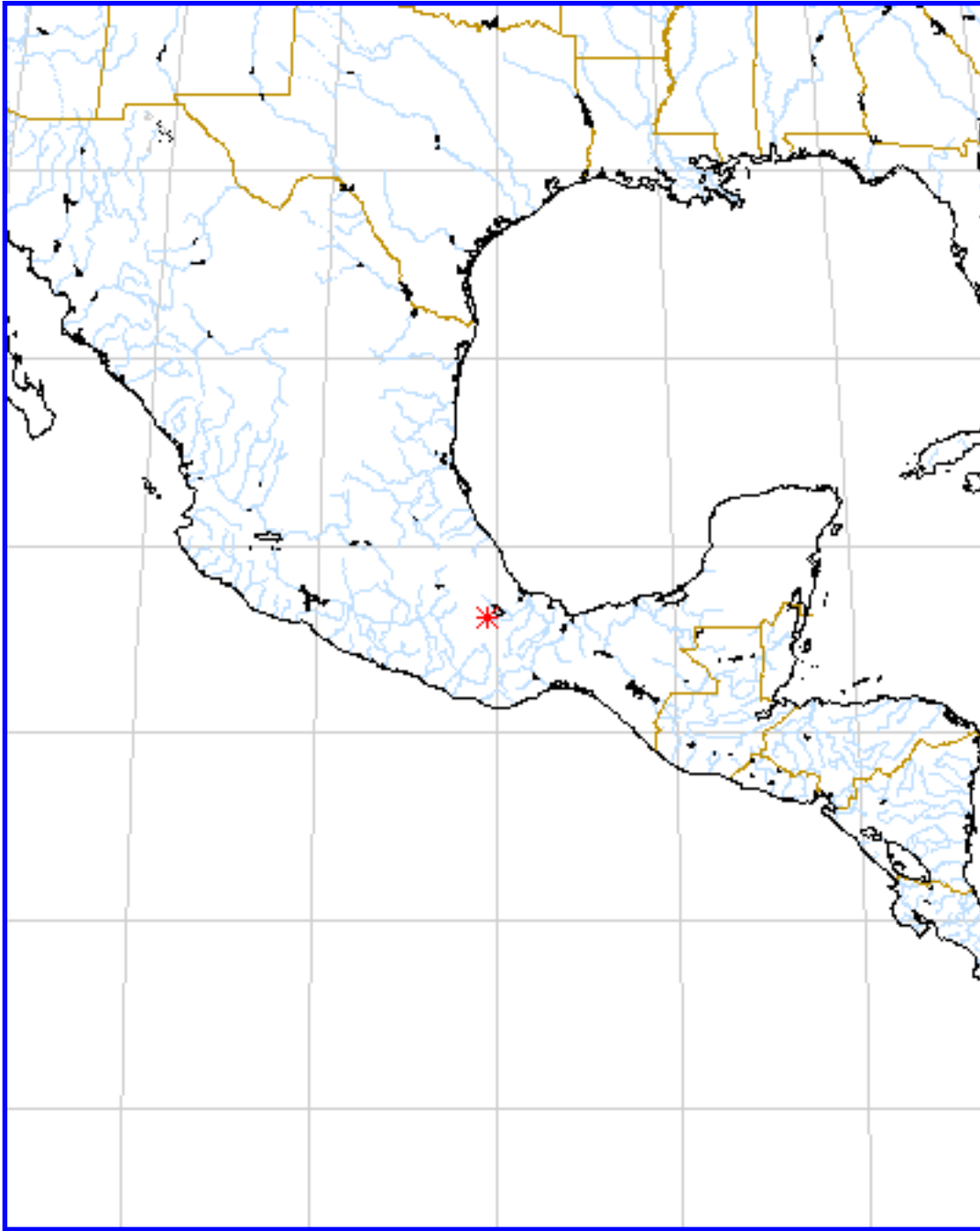
The appearance of any given clone will vary somewhat in response to environmental factors including: humidity, soil nutrition and light levels. The leaves can vary from yellowish to dark green and will occasionally develop purple areas. The size and thickness of the leaves as well as the general vigor of the plant will also vary.

Taking into account variations in appearance brought on by environmental or cultural conditions, most clones of *S. divinorum* look identical and therefore cannot be visually distinguished from one another. The distinctive clones described above are the only exceptions that I am aware of.

Genes:

The seed raised plants are important in that they are genetically unique—a quality which may be very important in future genetic studies and breeding experiments.

Xerox PARC Map Viewer: world 18.12N 96.59W (7.2X)



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- [Hide Map Image](#), [Retrieve Map Image Only](#), [No Zoom on Select](#),
- [Place mark at \(18.12N 96.59W\)](#), [Reset All Options](#)

Requested region is 25.00 deg. wide by 25.00 deg. (1725.00 miles) high.



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Salvinorin-A

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Rotate about the z axis by pressing the shift key and right mouse button together.

The image may be translated along the x and y axes by pressing control and the right mouse button.

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Clicking the right mouse button on the image gives a menu which offers several choices, including spinning the image and changing the appearance and color of the molecule.

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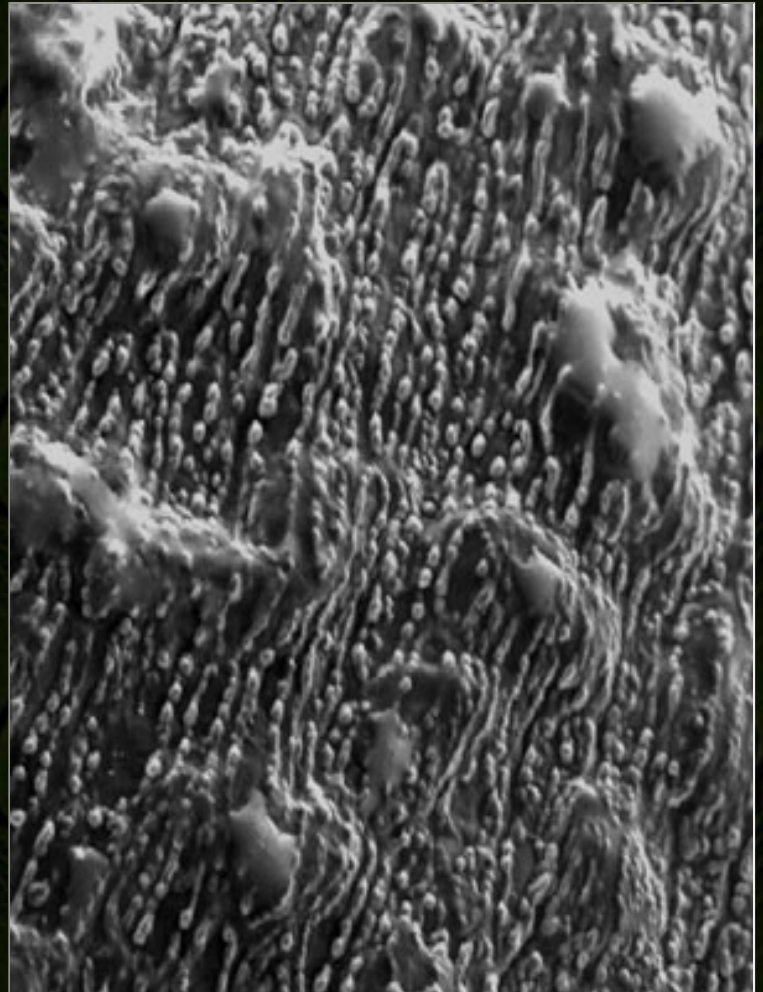
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Scanning Electron Micrographs of a *Salvia divinorum* Seed.

Photos by Michael Dunlap, University of California Chemical Engineering and Material Science.
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The *Salvia divinorum* Research and Information Center
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A 200 micrometer shot showing an entire seed.

A 35 micrometer section of the seed surface.



Interactive Botanical Anatomy

Click on the leaf to increase magnification to 40X the original size.

Salvia divinorum

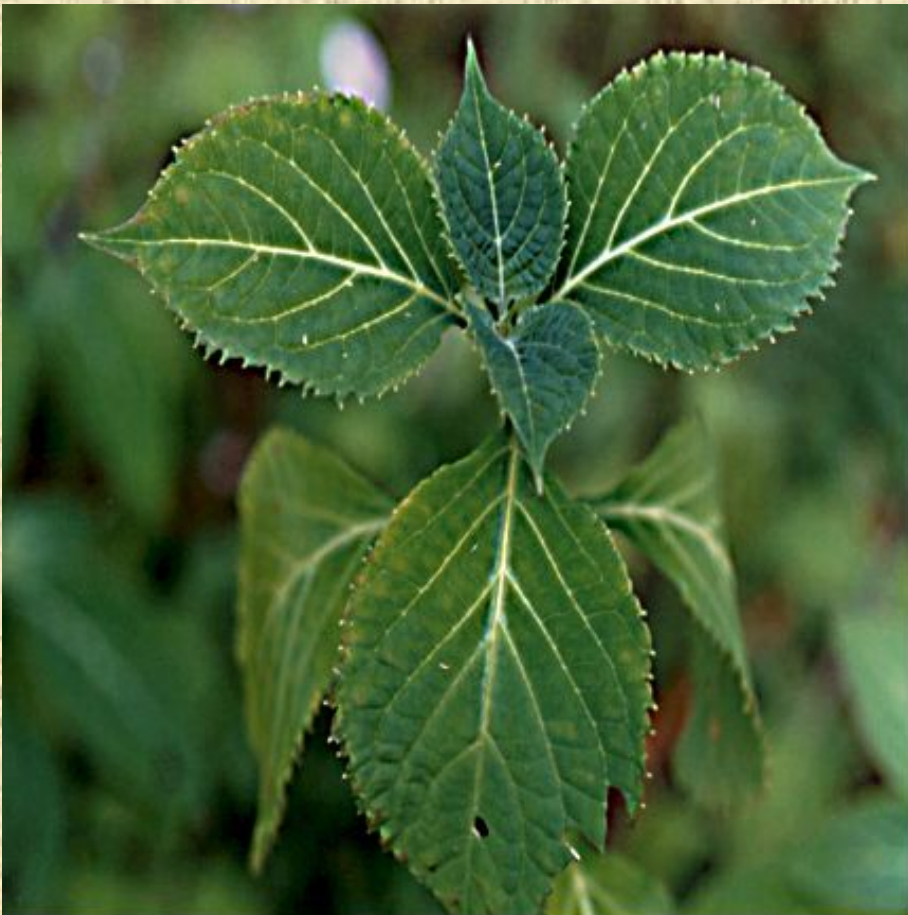


Image courtesy of Daniel Siebert

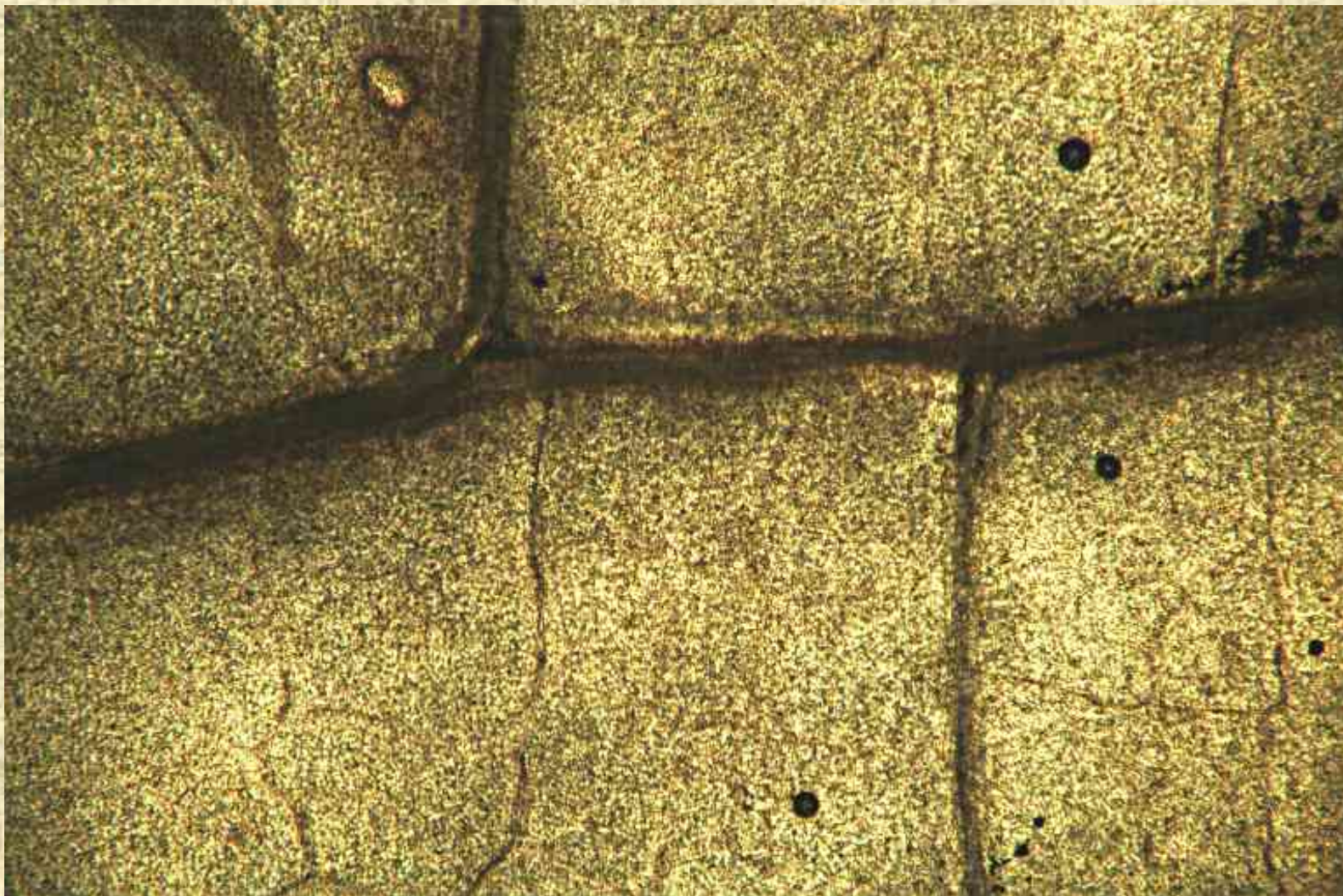
[[Up](#)] [[Salvia 40](#)]



Interactive Botanical Anatomy

Click on the leaf again to increase magnification to 100X the original size.

Salvia divinorum leaf (Wasson & Hofmann clone) magnified 40X the original size.



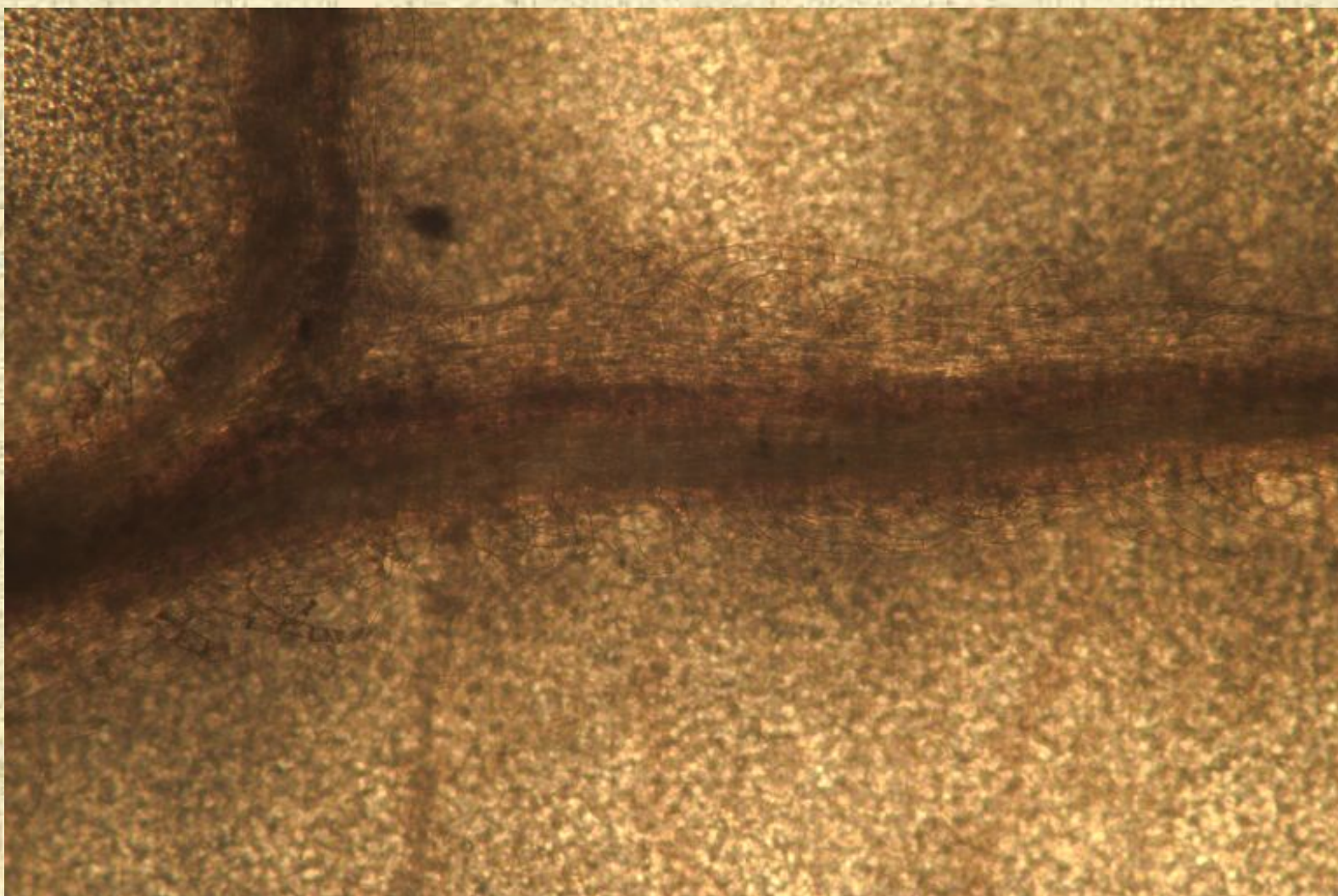
[[Up](#)] [[Salvia 100](#)]



Interactive Botanical Anatomy

Click on the leaf again to increase magnification to 200X the original size.

Salvia divinorum leaf (Wasson & Hofmann clone) magnified 100X the original size.



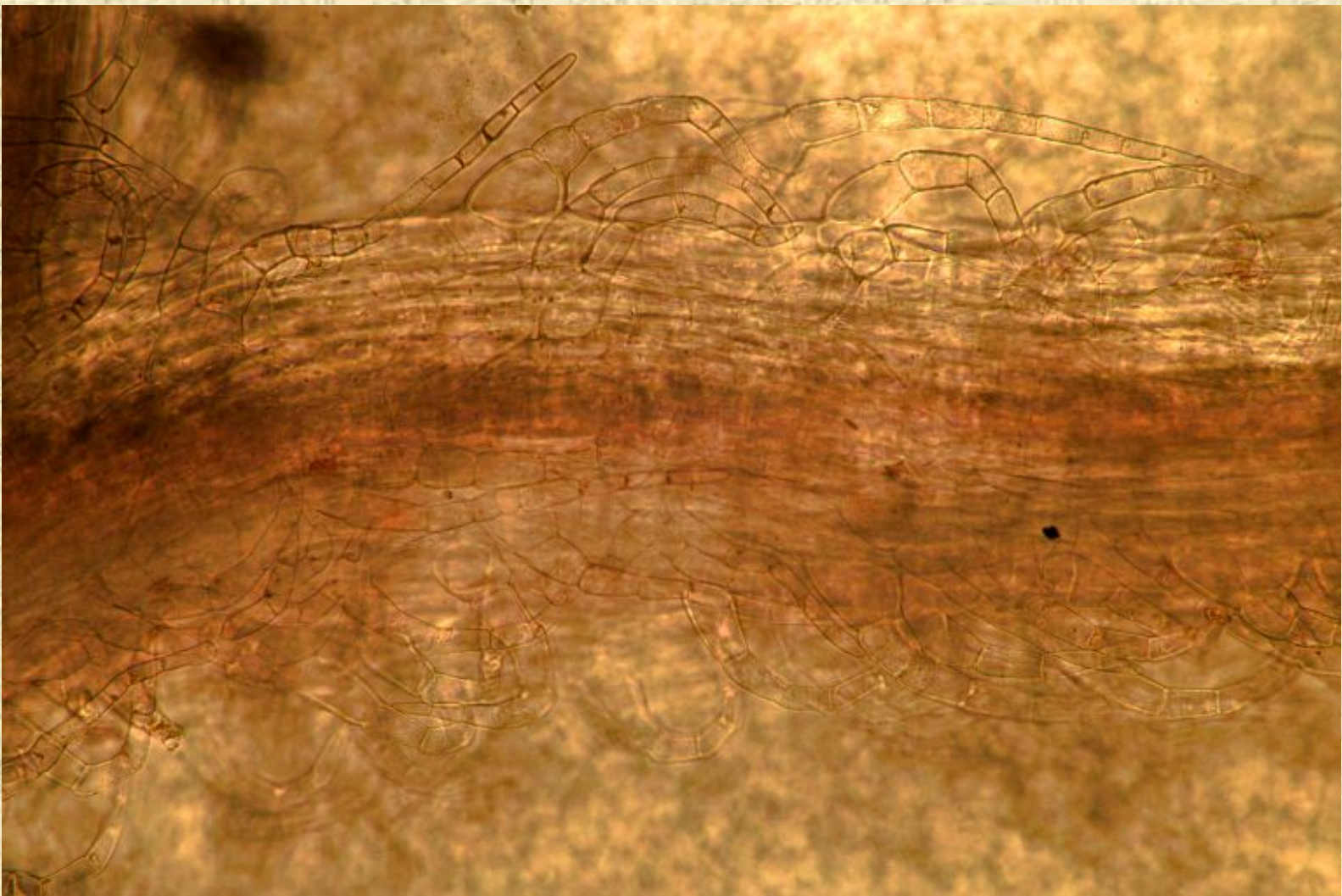
[[Up](#)] [[Salvia 200](#)]



Interactive Botanical Anatomy

Click on the leaf again to increase magnification to 400X the original size.

Salvia divinorum leaf (Wasson & Hofmann clone) magnified 200X the original size.



[[Up](#)] [[Salvia 400](#)]



Interactive Botanical Anatomy

Click on the leaf one more time to increase magnification to 1000X the original size.

Salvia divinorum leaf (Wasson & Hofmann clone) magnified 400X the original size.



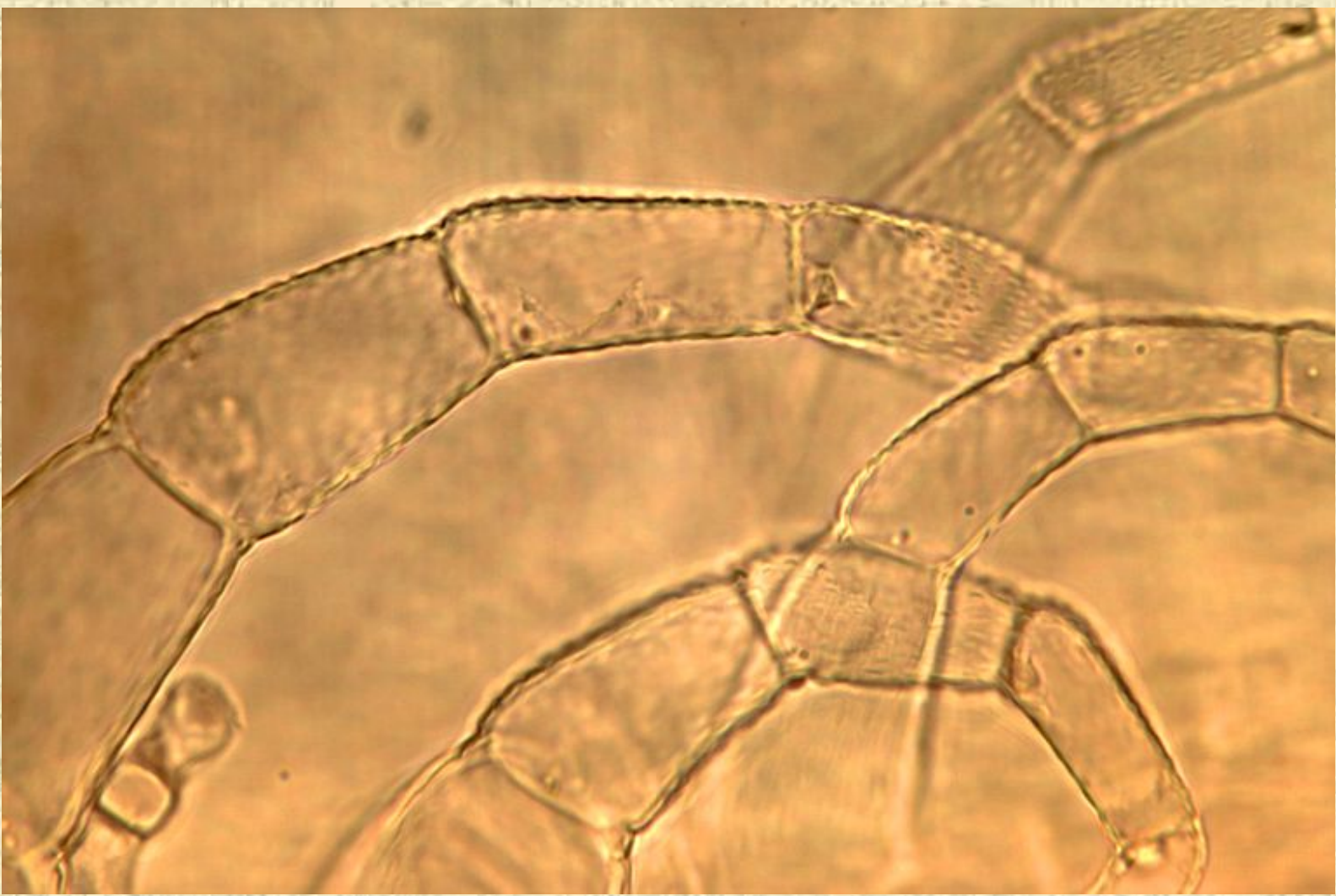
[[Up](#)] [[Salvia 1000](#)]



Interactive Botanical Anatomy

Click on the leaf again for the Thin-Layer Chromatographic fingerprint.

Salvia divinorum leaf (Wasson & Hofmann clone) **magnified 1000X the original size.**



[[Up](#)] [[TLC of Salvia](#)]

Salvia divinorum Bibliography

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I am currently compiling a more up to date version of this bibliography, which will appear in my forthcoming book "Divine Sage". When it is complete, I will post it here as well.

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THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Abstract

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Salvia divinorum, ceremoniously employed by the Mazatec Indians of Oaxaca, is endemic to the sierra inhabited by the Mazatec, its distribution anthropogenic. Plants spread vegetatively, flourishing in shaded, humid sites, flowering sporadically from October until June. Flower nectar and corolla dimensions suggest ornithophily, and the only pollination event observed involved a single hummingbird, but other factors suggest that visits by birds to the flowers in their present range are

opportunistic, and not a product of plant-pollinator coevolution. The species is diploid with $n=11$, pollen fertility is reduced, there is no active pollen tube inhibition within the style, but some event or process after the pollen tube reaches the ovary is aberrant, as no fully developed nutlet has ever been collected from a Mexican plant, and greenhouse cross-pollinations led to only 3% seed set. Hybridity is suggested, although intermediacy between two known species has not been recognized.

Journal of Ethnopharmacology **43** (1994) 53-56

Salvia divinorum and Salvinorin A: new pharmacologic findings

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Received 18 August 1993; revision received 28 December 1993; accepted 24 March 1994

The diterpene salvinorin A from *Salvia divinorum* (Epling and Jativa-M), in doses of 200-500 µg produces effects which are subjectively identical to those experienced when the whole herb is ingested. Salvinorin A is effectively deactivated by the gastrointestinal system, so alternative routes of absorption must be used to maintain its activity. Traditionally the herb is consumed either by chewing the fresh leaves or by drinking the juices of freshly crushed leaves. The effects of the herb when consumed this way depend on absorption of salvinorin A through the oral mucosa before the herb is swallowed.

Keywords. *Salvia divinorum*; Salvinorin A; Psychoactive plants; Psychoactive compounds

1. Introduction

Salvia divinorum is used by the Mazatec Indians of northeastern Oaxaca, Mexico primarily for its psychoactive effects which aid in ritual divination (Wasson, 1962, 1963). It is also employed remedially to treat various health conditions (Valdes et al., 1983).

The first live specimens of *S. divinorum* were given to Carl Epling by R. Gordon Wasson in 1962 and were cultivated at the University of California in Los Angeles (Wasson, 1962). Cuttings of this original clone were distributed to other botanical collections over the years and most of the plants in cultivation in the USA today originated from this original clone (Valdes et al., 1987). Recently, other clones have been appearing in collections. As of this writing there are at least four different clones present in public and private botanical collections in the USA.

The chemistry of this plant has been investigated several times. The diterpenes salvinorin A and salvinorin B have been identified and characterized. Salvinorin A has been shown to be active in mice while salvinorin B was inactive. No human studies with these compounds have previously been reported (Ortega et al., 1982; Valdes et al., 1984). Trace amounts of other diterpenes have been detected but have not yet been characterized (Valdes et al., 1984).

There are two methods of ingestion traditionally employed: either the fresh whole leaves are masticated and swallowed or, alternatively, the leaves are crushed to extract the juices which are then drunk. Of these two methods, chewing of the leaves is most reliable and requires a smaller quantity of leaves. The liquid preparation is often ineffective and when it does produce effects they are usually much milder than those reported for chewing, even when substantially larger quantities of leaves are used in the preparation.

When the leaves are chewed whole they must first be chewed well enough to be easily swallowed and so spend quite

some time in contact with the oral mucosa. When the leaf juice preparation is consumed it can be swallowed fairly quickly and consequently spends relatively little time in contact with the oral mucosa. The level of effects reported relates quite closely to the length of time the material spends in the mouth before being swallowed.

This presentation describes the effects of salvinorin A in humans, its deactivation by the gastrointestinal system and the essential role of the oral mucosa as an absorption site for salvinorin A from orally ingested leaves.

2. Materials and methods

All plant material used in this study was propagated from the clone originally brought into the USA by R. Gordon Wasson in 1962.

2.1. *Salvia divinorum* leaves

In order to investigate the relative importance of the oral mucosa as an absorption site for the active principals in *S. divinorum* leaves, the following experiments were carried out by six volunteers using ten large fresh leaves each (approximately 30 g total) which had been homogenized with 100 ml water using a blender. Each experiment was separated by several days.

(A) The material was swallowed as quickly as possible with the intention of quickly bypassing the oral mucosa; then the mouth was immediately rinsed with water to wash away any residual material that might be clinging to the oral mucosa. None of the volunteers reported any noticeable effects when the material was ingested in this manner.

(B) The material was held in the mouth for 10 min without swallowing; then the entire contents were spit out. This method proved consistently effective with all of the volunteers reporting very definite psychoactive effects.

2.2. Salvinorin A

Salvinorin A was isolated following the method of Valdes (Valdes et al., 1984). The identity of this material was verified by comparison with an authentic sample of salvinorin A using TLC, melting point and NMR.

Salvinorin A has previously been shown to be active in mice but it has remained uncertain whether this compound is responsible for the psychoactive effects produced in humans. In order to determine this, salvinorin A was administered to a group of 20 volunteers.

When salvinorin A was encapsulated and swallowed in doses as high as 10 mg there was no detectable activity. Experiments with the leaves indicate that the active principle of the plant is deactivated by the gastrointestinal system. To test for activity of salvinorin A, alternative routes of ingestion were attempted. Salvinorin A is not water soluble so injection was not attempted.

Absorption through the oral mucosa. A 2-mg quantity of salvinorin A was dissolved in 1 ml anhydrous ethyl alcohol then sprayed on the inner surfaces of the mouth using an aspirator. The material proved to be active; however only a small percentage is absorbed this way before it gets dispersed by salivary flow. Consequently this method was inefficient and results were inconsistent.

Inhalation of the vaporized compound. The material was placed on a piece of aluminum foil. A butane micro torch was then held beneath the foil until the material was seen to vaporize. As soon as this began, the vapors were inhaled

through a 15-mm glass tube.

Inhalation of the vapors produced by heating salvinorin A proved to be the most efficient method of ingestion tested. When 200-500 µg of salvinorin A is vaporized and inhaled the subjective effects produced are identical to those typically produced by the fresh herb. Doses up to 2.6 mg were tested in this manner. Typically threshold effects are noted at about 200 µg.

2.3. Effects

When salvinorin A is absorbed through the oral mucosa the first effects are usually experienced in 5-10 min. The strength of the effects builds very quickly over a few minutes, maintaining a plateau for about 1 h. The effects gradually subside over another 1-h period. The evolution of effects over time is identical to that of orally ingested *S. divinorum* leaves.

When salvinorin A is vaporized and inhaled the full effects are experienced in about 30 s. There is almost no transition period experienced. The strongest effects last 5-10 min and then gradually subside over about 20-30 min. As dosage increases above 1 mg the duration of the effects are somewhat increased. A similar evolution of effects is reported for smoked *S. divinorum* leaves.

The oral mucosa apparently acts as a time release buffer, slowly diffusing salvinorin A into the blood stream; hence when consumed orally, the effects begin more gradually, last longer and subside over a longer period of time than when the material is vaporized and inhaled. Although variable in duration, the effects experienced have the same overall characteristics regardless of the route of absorption used.

The nature of the effects experienced depends on many factors including dose, set and setting. Frequently people report having seen visions of people, objects, and places. With doses above 1 mg, out of body experiences are frequent. Occasionally individuals get up and move about with no apparent awareness of their movements or behavior. Some individuals speak gibberish during the most intense phase of the experience, others laugh hysterically.

Certain themes are common to many of the visions and sensations described. The following is a listing of some of the more common themes:

- (1) Becoming objects (yellow plaid French fries, fresh paint, a drawer, a pant leg, a Ferris wheel, etc.).
- (2) Visions of various two dimensional surfaces, films and membranes.
- (3) Revisiting places from the past, especially childhood.
- (4) Loss of the body and/or identity.
- (5) Various sensations of motion, or being pulled or twisted by forces of some kind.
- (6) Uncontrollable hysterical laughter.
- (7) Overlapping realities. The perception that one is in several locations at once.

Some of the effects appear to parallel those of other hallucinogens (i.e. the depersonalization experienced with ketamine, the rapid onset of effects and short duration of smoked DMT). The volunteers who were experienced with other hallucinogens all agreed that despite some similarities, the content of the visions and the overall character of the experience is quite unique.

2.4. Receptor Site Screening and MAO Inhibition

A sample of salvinorin A was submitted to NovaScreen™ for receptor site screening. At screening concentrations of 10⁻⁵ M there was no significant inhibition (i.e. 50% or less) for the following sites.

Neurotransmitters: Adenosine, alpha 1, alpha 2, beta, dopamine 1, dopamine 2, GABA-A, GABA-B, serotonin 1, serotonin 2, muscarinic 3, NMDA, kainate, quisqualate, glycine (stry sens.).

Regulatory sites: Benzodiazepine(centrl), glycine (stry insens.), PCP, MK-801.

Brain/gut peptides: angiotensin Ty2, arg-vasopressin VI, bombesin, CCK central, CCK peripheral, substance P, substance K, NPY, neurotensin, somatostatin, VIP.

Growth factors and peptides: ANF I, EGF, NGF.

Ion channels: Calcium (type N), calcium (type T and L), chloride, potassium (low conduct).

Second messengers: Forskolin, phorbol ester, inositol triphosphate.

Monoamine oxidase inhibition: Monoamine oxidase A, monoamine oxidase B.

3. Discussion and conclusions

When *S. divinorum* leaves are consumed, either by chewing the fresh leaves or by retaining the leaf juices in the mouth, enough of the highly active compound salvinorin A is absorbed through the oral mucosa and into the blood stream to produce a psychoactive effect. Swallowing of the herb is unnecessary and its effects are increased by lengthening the amount of time that the herb remains in the mouth. When the leaf juices are quickly swallowed, minimizing contact with the oral mucosa, the only route of absorption is through the gastrointestinal system where salvinorin A is deactivated before entering the blood stream. When pure salvinorin A is encapsulated and swallowed it is inactive even at relatively large doses, but when absorbed through the oral mucosa or vaporized and inhaled is extremely active. It is likely that if salvinorin A were administered by injection, it would prove to be active at even lower doses than those described in this paper.

Salvinorin A is the first entheogenic diterpene reported and is active in humans at extraordinarily low doses. It does not appear to affect any of the receptor sites affected by other hallucinogens. Further research into the methods of action and possible medicinal values of this and similar compounds may prove to be quite rewarding.

Acknowledgments

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High Performance Liquid Chromatographic Quantification of Salvinorin A from Tissues of *Salvia divinorum* Epling & Játiva-M

John W. Gruber, Daniel J. Siebert, Ara H. Der Marderosian and Rick S. Hock

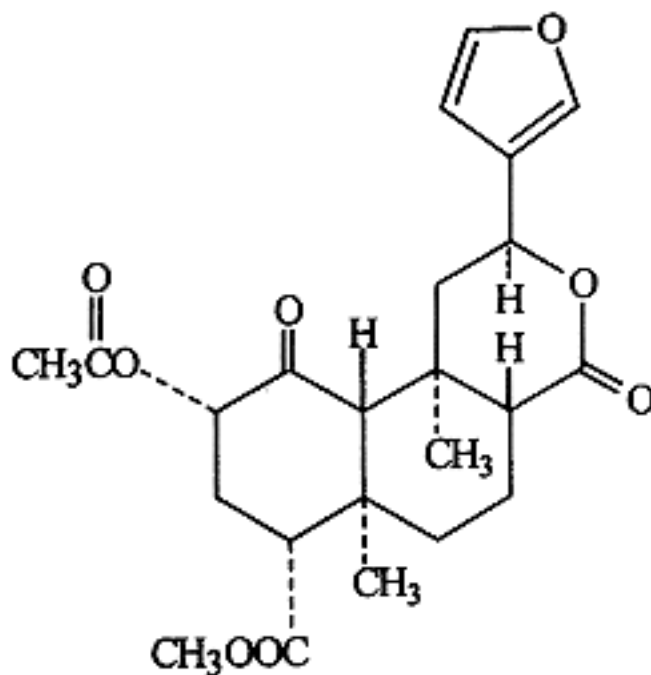
A reversed-phase high performance liquid chromatographic method for the determination of salvinorin A, a psychotropic diterpene isolated from the Mexican sage *Salvia divinorum*, has been developed. Extracts from several plant collections were examined on a C-18 column with UV detection and isocratic elution with acetonitrile: water (45:55). This assay allowed quantification of salvinorin A in extracts of leaves and stems of *S. divinorum* and has also been applied to the screening of related species for the production of salvinorin A. Levels of salvinorin A in leaves range from 0.89 to 3.70 mg/g dry weight. © 1999 John Wiley & Sons, Ltd.

Keywords: Hallucinogen; high performance liquid chromatography; Mexican sage; psychotropic diterpene; *Salvia divinorum*; salvinorin A.

INTRODUCTION

Salvia divinorum Epling et Jdtiva-M. (Lamiaceae) is native to Oaxaca in Central Mexico. Among the indigenous Mazatec people of Oaxaca, *S. divinorum* has long been used in ceremonial healing rituals as a means of inducing a visionary state that allows the participants to divine the cause of illness or ailment (Wasson, 1962; Valdés *et al.*, 1983). The psychotropic activity of this mint species has been attributed to a neoclerodane diterpene found in the leaves, salvinorin A (**1**) (Ortega *et al.*, 1982; Valdés *et al.*, 1984, 1987; Siebert, 1994). It has been demonstrated that salvinorin A is an extraordinarily potent drug in humans, exhibiting threshold

effects at doses in the range of 200•500 micrograms, making it the most potent natural hallucinogen ever studied (Siebert, 1994). The site of action and mechanism of pharmacological activity of **1** remain unknown. When submitted for major neurotransmitter and second messenger receptor site screening, **1** showed no significant binding to these sites at concentrations of 10^{-5} M (Siebert, 1994). It has been suggested that the extraordinary potency of salvinorin A, and the absence of any known mechanism for its effects, could indicate that a new receptor system is involved in the activity of the compound (McKenna, 1996).



1

Salvinorin A has thus far been attributed uniquely to *S. divinorum*; no other natural source for this compound has been identified nor has it been synthetically produced. The current distribution of *S. divinorum* suggests that all existing stands of the plant have been intentionally cultivated by humans; no clearly wild populations of the species have been identified (Reisfeld, 1993). Furthermore, while the plant is readily propagated through asexual reproduction by rooting stem cuttings, it appears that it rarely if ever reproduces from seed in nature. It has been proposed that *S. divinorum* may in fact be a hybrid, resulting in substantially reduced fertility within the species (Reisfeld, 1993). The parentage for such a hybrid may remain unknown as no obvious candidates have been proposed as likely progenitors.

Since its initial isolation, no analytical assay has been published in order to

quantify precisely the amount of salvinorin A present in samples of *S. divinorum* or any other plant species. The purpose of the current study was to develop a sensitive quantitative assay to determine the amount of **1** present in leaf samples of *S. divinorum*. In addition, the method has been used to screen for this compound in other species.

EXPERIMENTAL

General experimental procedures. Salvinorin A (**1**) used for standard curve development was purified from *S. divinorum* leaf extracts and authenticated by nuclear magnetic resonance spectroscopy and by thin layer chromatographic (TLC) comparison with authentic **1** (Valdés *et al.*, 1994). All solvents used for extraction and chromatography were of high performance liquid chromatographic (HPLC) grade from Fisher Scientific (Fair Lawn, NJ, USA). Water used in HPLC mobile phase mixtures was distilled and subsequently filtered through a 0.22 μ m membrane (Millipore Corp., Bedford, MA, USA).

Plant materials. Asexually propagated plants of *S. divinorum* used in establishing the HPLC methods were purchased from Logee's Greenhouses (Danielson, CT, USA) and multiplied by rooting additional cuttings in the S.B. Penick Experimental Greenhouse at the Philadelphia College of Pharmacy and Science. Voucher specimens were deposited in the herbarium of the Philadelphia College of Pharmacy and Science. Additional *S. divinorum* samples used for analysis were collected from established outdoor stands.

Extraction of samples. Plant tissues were lyophilized after harvest and ground to a homogeneous powder in a Wiley mill (no. 20 mesh). Samples (0.500 g) of lyophilized whole leaf were extracted in 125 mL roundbottom flasks by steeping in 25 mL of chloroform for 30 min. The extract was filtered and the filtrate set aside. The extraction flask and filtered solids were rinsed with an additional 15 mL of fresh chloroform. The filtrate from the rinse was then combined with the original filtrate and the resulting solution was evaporated to dryness with a rotary evaporator. The dry solids were redissolved in a mixture of 20.0 mL methanol and 5.0 mL acetone using sonication to assist in dissolving of all solid material.

Chromatography conditions. HPLC was performed using a Milton Roy HPLC system (Riviera, FL, USA), consisting of a Constametric 3000 Series isocratic pump, a Rheodyne injector (Rheodyne L.P., Cotati, CA, USA), and a

Spectromonitor 3100 variable wavelength UV•VIS detector. The analogue detector output was acquired by an advanced computer interface (Dionex Corp., Sunnyvale, CA, USA), converted to a digital signal, and then processed by AI•450 Chromatography Automation Software (Dionex). The HPLC column was a Zorbax (MACMOD Analytical, Inc., Chadds Ford, PA, USA) 300 SBC18 column (250 x 4.6 mm i.d.; 5 micrometer particle diameter; 300 Å average pore size). In order to protect the integrity of the analytical column, all analyses were performed with a coupled C•18 guard column. A mobile phase of acetonitrile:water (45:55) was used for all analyses at a flow•rate of 1.0 mL/min, and **1** was detected by UV absorption at 208 nm.

Composite standard curve. A standard curve for **1** was produced using a solution of 0.051 mg/mL of standard dissolved in the HPLC mobile phase. By varying injection size, six different amounts of salvinorin A (0.255, 0.510, 0.765, 1.02, 1.28 and 1.53 [µg]) were chromatographed: for each amount analyzed, three injections were made.

In order to validate the HPLC method, three separate determinations of the standard curve were performed. The data collected for each amount for all three curves (i.e. nine data points per amount) were averaged and replotted to yield a composite standard curve for salvinorin A.

Quantification of salvinorin A in plant tissue samples. For each sample, 20 microliter of the reconstituted methanol: acetone extract was injected into the HPLC and the area of the peak due to **1** was integrated. This peak area was used to calculate the amount of salvinorin A present in the tissue sample by applying the linear equation obtained from the composite standard curve.

RESULTS AND DISCUSSION

Under the isocratic chromatographic conditions, authentic salvinorin A (**1**) eluted in approximately 8.0•8.1 min (Fig. 1A). The analysis of the plant tissue extracts described below allowed rapid elution of polar components, baseline resolution of the analyte of interest, and a short analysis time (for examples, see Fig. 1).

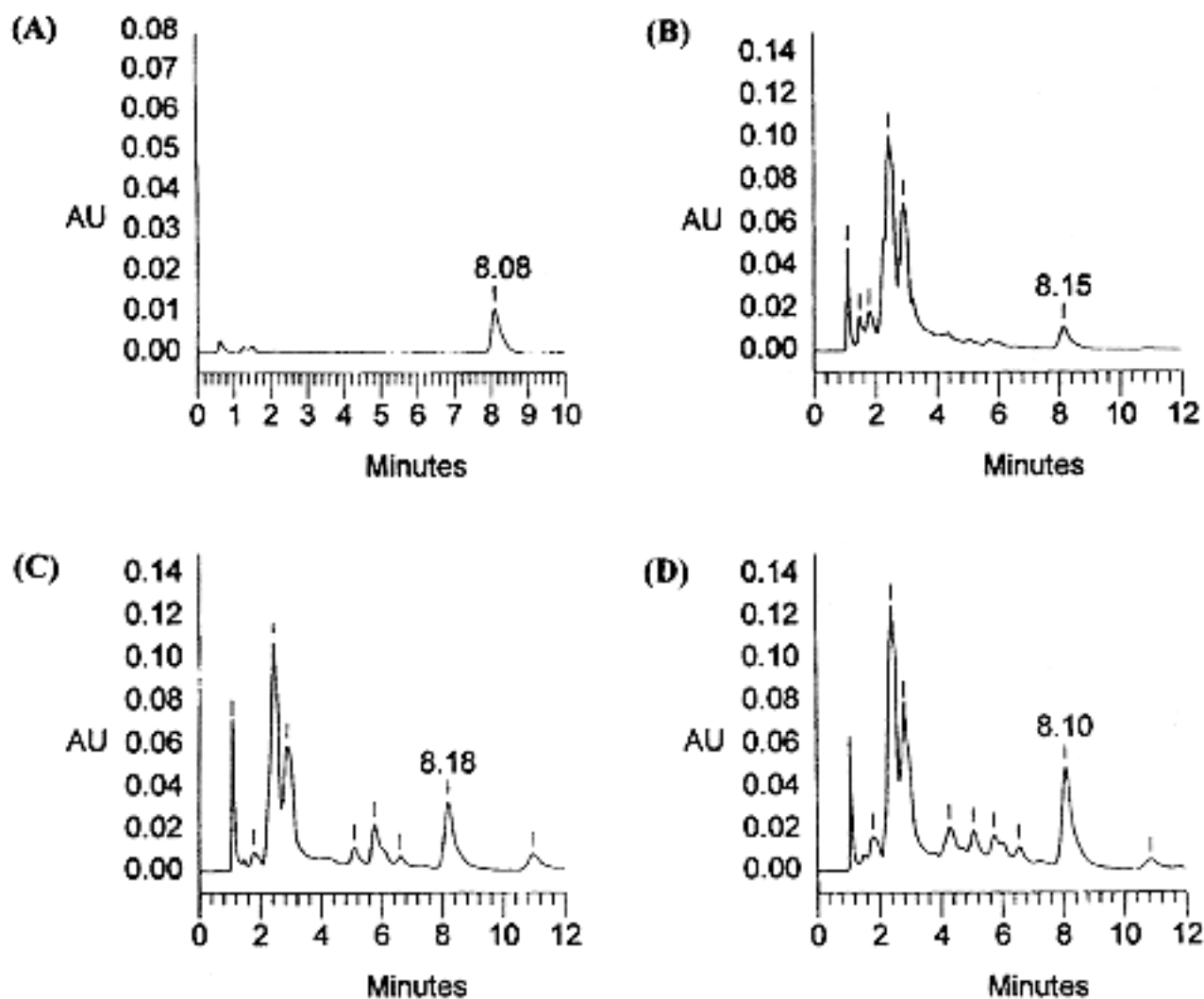


Figure 1. HPLC chromatograms of an authentic sample (0.2551Ag) of salvinorin A (A), and of representative *Salvia divinorum* tissue extracts obtained from "Palatable" clone (Bret Blosser) (B), from Cerro Rab6n clone (L. J. Valdés) (C), and from a seed grown plant DS03 (D. J. Siebert) (D). In each case the retention time of the peak representing salvinorin A is indicated. (For chromatographic protocol see Experimental section).

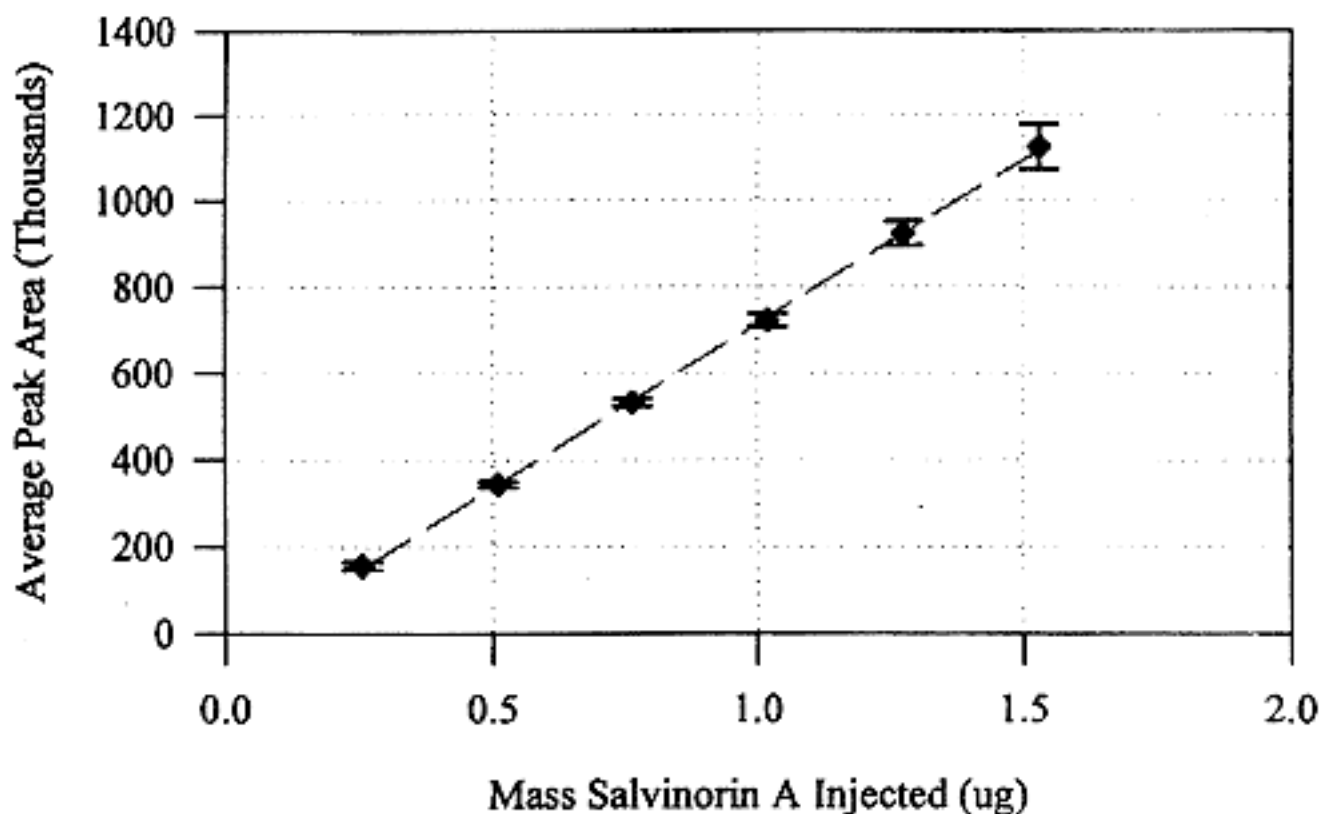


Figure 2. The composite standard calibration for the quantification of salvinorin A by HPLC (the error bars indicate ± 1 standard deviation; the linear regression equation for the calibration curve is $y = 759,334x + 44,127$).

A composite standard curve for **1** was compiled from three individual determinations of the standard curve (Fig. 2). The correlation coefficients for these three standard curves were 0.9997, 0.9997 and 0.9967. The coefficient of variation among the three curves was 5.9%. The coefficients of variation for each injected amount across all three days ranged from 1.7 to 5.7%.

The peak identified as salvinorin A (**1**) from authentic standard solutions was observed in extracts of leaves and stem from *S. divinorum*. In order to examine the concentration range of **1** found in various populations of *S. divinorum*, 20 different samples of leaves were collected from cultivated plants in private collections as well as endemic populations of the plant in Oaxaca. Representative chromatograms for three different samples of *S. divinorum* are shown in Fig. 1. Estimations were based on the average of two separate injections. The determinations of the leaf content of salvinorin A showed a broad range of values ranging from 0.89 to 3.70 mg/g dry weight (Table 1). Stem material showed considerably lower values of **1** equivalent to approximately 4% of the level found in leaves.

Table 1. Salvinatorin A content of extracts of *S. divinorum*

Sample Description	Salvinorin A content (mg/g) dry wt.)
Wasson & Hofmann clones	3.70
	2.83
	2.76
	2.25
	1.94
"Palatable" clones	2.83
	2.32
	0.90
	0.89
Seed-grown plants	3.70
	3.29
	2.79
	2.78
	2.21
Cerro Rabón collection	2.61
Huatla de Jimenez collection	1.89
Clones uncertain	2.74
	2.39
	2.28
	1.91
Wasson & Hofmann stem	<0.63

Since the genetic heterogeneity of different populations of *S. divinorum* is unknown, it is not possible to attribute the different levels of **1** in these plants to any specific environmental or genetic conditions. Four separate collections of the plant which may represent distinct clones showed that variability in levels of **1** between clones is as great as the variability between plants of the same clone grown in different locations. These results are in contrast to earlier TLC analyses that suggested that there were no appreciable differences in levels of salvinorin A among plants grown in Michigan, Louisiana, or Mexico (Valdés, 1994). The

Wasson and Hofmann clone samples showed a range of 1.94 to 3.70 mg/g of **1** with an average value of 2.69 mg/g (± 0.67 , $n = 5$). The "palatable" clone showed a range of 0.89 to 2.83 mg/g of **1** with an average of 1.73 mg/g (± 0.99 , $n = 4$). Two other samples from distinct collections made in Oaxaca contained 2.61 and 1.89 mg/g of salvinorin A.

An early report by Epling and Játiva (1962) showing that *S. divinorum* was most closely allied to *S. concolor* Lamb ex. Benth led us to screen this species for salvinorin A content. Ethnobotanical reports suggesting that *Coleus blumei* was similarly used as a psychotropic by the Mazatec (Wasson, 1962) caused us to screen one sample of this species as well for possible content of **1**. HPLC analysis of the leaf extracts of these two species did not show any salvinorin A present, nor was **1** found in leaf extracts of *S. blepharophylla*, *S. chiapensis*, *S. gregii* var. San Isidro, *S. leucantha*, *S. membranacea* or *S. recurva*.

In summary, application of a novel HPLC methodology to quantify salvinorin A in *S. divinorum* leaves established the typical levels of this compound in a number of samples of the plant. Further screening of additional sage species for **1** may help elucidate the origins and taxonomic position of *S. divinorum* within the genus *Salvia*. Additionally, this analytical assay can be utilized in screening for salvinorin A in other *S. divinorum* plant parts.

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Salvinorin A: Notes of Caution

Daniel J. Siebert

(This site is created and maintained by [Daniel Siebert](#))

(Previously published in "The Entheogen Review" Vol. 3, No.4: Winter Solstice, 1994)

Salvinorin A (the major active principal of the plant *Salvia divinorum*) is an extremely powerful consciousness altering compound. In fact it is the most potent naturally occurring hallucinogen thus far isolated. But before would-be experimenters get too worked-up about it, it should be made clear that the effects are often extremely unnerving and there is a very real potential for physical danger with its use.

When the herb *Salvia divinorum* is consumed either by smoking the dried leaf or chewing the fresh leaves the effects are usually (but not always) pleasant and interesting, this is because when used this way the amount of salvinorin A absorbed into the blood stream is usually very small and in the case of the chewed leaves it is absorbed into the blood stream very gradually.

The pure compound salvinorin A is active at 200 - 500 mcg when vaporized and inhaled. Since very few people have the costly equipment necessary to accurately weigh anything close to this small an amount, it is inevitable that people will try to visually estimate the dose. Unfortunately there is little room for error before the effects become potentially dangerous. When the dose goes above 500 - 1000 mcg the effects can be very alarming, I have seen several people get up and lunge around the room falling over furniture, babbling incomprehensible nonsense and knocking their heads into walls. Several people have tried to wander out of the house. When the experience is over they have no memory of any of this. In fact they usually remember very different events. To an outside observer people in this condition have a blank look in their eyes as if no one is present (and perhaps no one is). It is also common for people to have a facial expression which is probably best described as being like that of a frightened animal. It appears that at these "larger" doses one completely loses awareness of, and control over, the physical body and for some reason part of the brain causes the body to get up and move about recklessly while the individual has no awareness of where their physical body is or what it is doing. It seems inevitable that one of these days some careless person will do too large a dose without a sitter and will wander out in the street, or hurt themselves in some way.

Because the dose is so small and insignificant looking, there is a tendency for people to think they need more than what they are told is a safe dose. Another problem is that the technique of vaporizing and inhaling the compound can be a bit tricky. Salvinorin A has a relatively high boiling point and people often don't get it hot enough to remain a gas all the way down into the lungs. Another problem is that so little is used that the vapor often disperses before it gets inhaled. Sometimes people just don't hold the vapor in their lungs long enough for thorough absorption. Several people after trying a dose in the recommended safe range and not getting an effect assumed that they needed a larger dose, when in fact

the problem was that they did not vaporize the material efficiently the first time. I have already seen more than one intelligent, careful and experienced person accidentally do too large a dose because of this. Fortunately they had sitters and managed to get through the experience safely.

It is also important to understand that there have been no toxicological studies of this compound in humans. It is true that the Mazatecs have used the plant for a very long time and don't seem to have problems with it, but when the pure compound is used it would be a simple matter to consume a dose hundreds of times greater than anything ever encountered by the Mazatecs.

Not only is salvinorin A chemically different from other hallucinogens (it is a diterpene not an alkaloid) but its effects are quite different as well. Many people consider the effects less manageable and harder to work with than other entheogens. The majority of people who have had a full blown experience with salvinorin A are reluctant to ever do it again. Anyone choosing to experiment with this compound should always have an alert, clear-thinking sitter present to prevent them from injuring themselves or others.

Salvia divinorum as an herb can be used quite safely and many people claim that it has proved beneficial to them. Hopefully there will not be a rush to isolate the pure compound as it is almost inevitable that it will cause problems, people will get hurt, the compound and possibly the plant will get negative attention and it will become scheduled. We will just be adding one more potentially valuable plant ally to the list of species which are already feared and condemned in our society.

If you choose to pursue a relationship with this plant please treat it with respect and care. Perhaps if people can use the plant safely and responsibly it will be able to grow and thrive freely into the future.

Daniel Siebert Speaks...

Interviewed by Will Beifuss

The Entheogen Review. 1999 V. 8, No. 3.

[The *Salvia divinorum* Research and Information Center](#)

is created and maintained by

[Daniel Siebert](#)

Will: When did you first become interested in *Salvia divinorum*?

Daniel: It might be more fitting to ask, "When did *Salvia divinorum* first become interested in me?" I first came across a description of *Salvia divinorum* in 1973 in a little booklet entitled *Legal Highs*, which described the effects of *Salvia divinorum* as being similar to psilocybin, but shorter-acting. This caught my attention immediately, since I was a young, "hip" teenager at the time, with a lot of curiosity about psychedelics, and the comparison to psilocybin was seductive. I probably would have tried it immediately if I could have gotten my hands on it, but back then *Salvia divinorum* was quite rare and very hard to obtain. *The Church of the Tree of Life* owned a large plant and was offering rooted cuttings as a premium for donating \$100.00 or more to their *Church*, but that was more money than I could possibly afford at the time. Nevertheless, I was interested enough that I wrote to the *Church* for more information, but that was as far as it went. It was not until the early '80s that I came across the plant again. I was browsing through *The Redwood City Seed Company's* catalog and noticed that they were offering *Salvia divinorum* plants. I think they were charging around \$25.00 at the time, and I ordered one. Unfortunately the plant died within a few days after I received it. About a year later, I

attended a *Terence McKenna* lecture near Los Angeles. I noticed a man in the audience who was carrying a potted *Salvia divinorum* plant. I went over and introduced myself. He was surprised that I recognized his obscure little plant and he explained that he was having good success growing it. The plant he was carrying was a spare plant that he brought so that he could share it with others. He broke off a branch and gave it to me. By the time I got home the cutting was completely limp and looked hopeless, but I managed to revive it by putting it in a glass of water and misting it frequently. Eventually the plant rooted and I potted it up and put it in the small, eight-foot-tall greenhouse I owned at the time.

While the plant was growing I did some research. After asking around a bit, I found several people who had tried *Salvia divinorum*. They all seemed rather unimpressed by the effects (or lack of them) and seemed to feel that it was basically not worth the trouble. Many people were actually of the opinion that *Salvia divinorum* was inactive and attributed the reports of its alleged activity to the placebo effect. However, one person I spoke with was *Kat Harrison*. Although her own experiences with the plant had been underwhelming, she mentioned that her friend, the anthropologist *Bret Blosser*, had taken *Salvia divinorum* under the guidance of a Mazatec shaman and had a powerful visionary experience. Apparently he had been instructed to eat 13 pairs of leaves that had first been rolled into a cigar-shaped cylinder.

Within about a year the plant I had obtained was hitting the ceiling of my crowded little greenhouse and was suffering a serious infestation of scale insects. I decided to move the plant outside, hoping that I could deal with the scale problem more easily once the plant was outdoors. Almost immediately when I moved the pot, the plant leaned over and the main stem snapped off, right at the base of the plant—just a few inches above the soil. Trying to rescue the situation, I saved some cuttings from the fallen plant and I collected all the leaves that were free of insects. I wrapped the leaves in moist paper towels, then put them in a plastic bag in the refrigerator, hoping that they would stay fresh until I could find an opportunity to try them. At that time it was commonly believed that *Salvia divinorum* was only active when the

leaves were consumed fresh. The dried leaves were thought to be completely inactive.

Finally, about a week later, I arranged to try the leaves with two friends. We had decided to try the leaves together outdoors on the patio at dusk, ingesting them in the same manner as Blosser. We each counted out our 26 leaves, rolled them into a nice cigar-shaped bundle and began to take bites. The more I ate the worse it tasted. It became increasingly difficult to swallow because of the strong bitterness, but somehow we all managed to finish our leaves. In about ten or fifteen minutes I seemed to notice a slight change in my vision. I could vaguely perceive a colored halo surrounding objects. I said, "I think I feel something." Then I stood up and walked a short distance. Moving felt a little odd. I was suddenly more aware of space and perspective. I was now certain that things were looking different. I remember saying, "I definitely feel something now."

One of my friends looked a little disappointed and said, "I don't feel anything." Then almost before he finished saying the word, "anything," he fell out of his chair. He was laughing hysterically. I don't think I have ever seen anyone laugh so hard, his body was convulsing with laughter. He seemed to be trying to say something, but it was incomprehensible because he couldn't stop laughing. His laughter was contagious and we all started laughing uncontrollably. After several minutes, he was finally able to speak. He asked, "Are you in it?" At the time, I was not sure what he meant by this question; later he explained that he was in an underground cavern. He was asking us if we were there too.

By this time, all three of us were experiencing the profound effects of the herb. There was something very natural and nurturing about it. I felt a deep sense of assurance and comfort, a feeling that everything was at peace and as it should be. I saw the cozy little homes of fairy-like nature spirits nestled in the hills all around me. I saw long-eyelashed elf-like entities that were strangely cartoonish in character. Interestingly, although we did not talk about it during the experience, all three of us later described seeing these long-eyelashed entities. After about an hour, the effects gradually began to subside, leaving us feeling relaxed, comfortable, and

amazed. It was a truly wonderful experience. Ever since then, I have been passionately interested in this plant.

Will: *Salvia divinorum* has a reputation for producing very bizarre effects. Do you feel this plant can be used for spiritual/personal growth outside of its traditional use by Mazatec shaman?

Daniel: Absolutely. I think this is the main reason people are drawn to *Salvia divinorum*. It is like a trans-dimensional doorway that allows one to step outside of consensual reality, providing a unique opportunity to explore the nature of consciousness and the fundamental mysteries of existence. It can take one through death and birth. It can transport one to another place and time. It can show you the creation and end of the entire universe. Experiences like these leave a lasting impression and are tremendously enriching. I believe that *Salvia divinorum* will also prove extremely valuable as a tool in psychotherapy, because it allows access to the deep inner reaches of the psyche. I have heard from many people whose lives have been positively transformed as a result the insights gained from their experiences with this herb.

There is an interesting double-blind experiment currently underway in Canada that is studying the effectiveness of *Salvia divinorum* as an aid to meditation. The study is headed by Ian Soutar and is being funded by MAPS. Ian has been involved with a group of Quakers who practice silent meditation. They have found that low, non-visionary doses of *Salvia divinorum* taken sublingually have the effect of freeing the mind of distracting thoughts and promoting a clearer, more focused state of mind that is ideal for their meditation practice. This study is interesting to me because it is exploring a whole new approach to working with *Salvia divinorum*.

Will: Tell me about the book you are currently writing.

Daniel: Yes, of course. I am very excited about the project. The book has grown much larger than I had originally conceived, and consequently is taking me much longer to complete than I had originally planned, but I feel that it will

prove well worth the wait. The book is quite comprehensive and covers virtually all aspects of the subject: history, botany, horticulture, ethnobotany, chemistry, biochemistry, the phenomenology of its effects, preparation and safety, methods of use, the importance of ritual, etc. I am toying with the idea of publishing two or three sections of the book separately and prior to completing the entire work. One of these would be a book on the botany and horticulture of *Salvia divinorum* and another would be on the phenomenology of its effects.

Will: In researching the book, have you traveled to México?

Daniel: Yes, I spent some time in the Sierra Mazateca in the spring of 1999 conducting interviews, taking photographs, exploring *Salvia divinorum*'s native habitat, and participating in traditional ceremonies with two well-respected shamans. The trip was quite magical, and fruitful. It greatly deepened my respect for this herb and my appreciation for the indigenous healers who work with it. I learned a great deal about *Salvia divinorum* from the Mazatec perspective and I will be sharing some of what I learned in my forthcoming books. It is an extraordinary region and I anticipate returning regularly to conduct further research and to visit my new friends there.

Will: Do the shamans you met in México know of *Salvia divinorum*'s growing popularity worldwide? Did you mention this to them? If so, what do they think of this?

Daniel: The *curanderos* I spoke to seemed unaware that *ska María Pastora* was growing in popularity abroad. Most of the foreigners that come to their region are interested in the *hongitos* and, to a lesser extent, the morning glories. They do occasionally get people who are interested in *Salvia divinorum*, but they are very few and far between. They seemed genuinely surprised that I was so interested in learning about *Salvia divinorum*. Although it is becoming increasingly well-known in the world, it is still quite obscure compared to magic mushrooms. I think it will take awhile before the Mazatecs start seeing much *Salvia divinorum* tourism. I had an interesting conversation with a *Doña Julieta*. I explained to her that most people experimenting with *Salvia divinorum* these days smoke the leaves. She was

quite opposed to this practice and said that it was extremely disrespectful to use the plant in this way. She said that this was equivalent to burning your own children. Obviously she feels quite strongly about this. She made it very clear that when dealing with sacred plants, honor and respect are of paramount importance, and that *las hojas* should not be taken without observing the appropriate ritual diet and using them in a proper ceremonial context under the guidance of an experienced and reputable shaman such as herself.

I should mention here that there are now non-Mazatec entrepreneurs who are going into the region and purchasing *Salvia divinorum* leaves from less scrupulous Mazatecs for export. These export operations are removing hundreds of kilos of dried leaves from the region annually. Obviously the Mazatecs who are selling to these buyers are beginning to realize how popular their sacred herb is becoming abroad.

Will: What other research do you plan on conducting in México?

Daniel: Primarily, I am interested in spending more time with some of the Mazatec shamans who use *Salvia divinorum* so that I can develop a greater understanding of their use of this plant, and their particular perspective with regard to it. I think that it is very important that people who are experimenting with this herb have some knowledge about its traditional use. These shamans know a great deal about how to work with this plant in a meaningful way. They understand what can be accomplished with it and how to use it to achieve specific goals. As is true in many indigenous cultures around the world, shamanic sacred traditions are quickly disappearing. Few young Mazatecs are interested in learning these traditions. Much of this knowledge will be lost in the next 20-30 years as the current generation of elderly shamans die out. Very little information has been recorded regarding the Mazatec traditions surrounding *Salvia divinorum*. If this knowledge is to be preserved, the time to do it is now, before it disappears.

I am interested in determining whether or not some of the Mazatec's immediately contiguous neighbors, the Cuicatecs and Chinantecs, also utilize *Salvia divinorum*. I would also

very much like to determine the identity of a plant called "Yerba de la Virgen," which according to a 1952 paper by *Weitlaner* was used by the Otomí people in the somewhat distant region of Tulancingo, Hidalgo in the same manner as *Salvia divinorum*. It would be fascinating if this turned out to in fact be *Salvia divinorum*; but even if it is not, it would be quite interesting to discover its identity.

I am also planning to look into the genetic diversity of *Salvia divinorum*. This plant very rarely produces seed, and even on the infrequent occasions when seed has been obtained, their viability has been quite low. Because of this, the plant is virtually always propagated asexually from cuttings. Truly wild, genetically diverse, seed-producing populations of *Salvia divinorum* have never been observed by botanists. At first glance, many populations of *Salvia divinorum* appear wild, but one must realize that the Mazatecs deliberately choose to plant it in out-of-the-way locations. They believe that it should not be grown where it will be seen by passers-by, lest it lose its power. In a humid environment, such as the wooded ravines in the Mazatec Sierras, stem sections quickly root when they make contact with moist soil. Once planted in such a location, the plant spreads asexually on its own within the immediate environment, propagating itself from branches that break off or fall over. After many years the plants becomes completely naturalized in that location, appearing quite wild. It is certainly possible that truly wild populations of *Salvia divinorum* exist somewhere. However, as I said, such populations have never been observed by botanists, and the Mazatecs I spoke with assured me that it does not grow wild, but is always introduced to a location through human effort. Therefore, it appears that this plant is a cultigen with very limited genetic diversity. It may be that there are relatively few genetically different clones of *Salvia divinorum* growing in the entire region, and it is entirely possible that this species is predominately monoclonal. I would like to collect more live specimens from a wide variety of locations throughout the region so that we can see if they appear to be genetically identical or not. This could be done using isozyme analysis or DNA fingerprinting techniques.

Will: You recently conducted an experiment to test the putative psychoactivity of another *Salvia*-*Salvia splendens*.

How was the experiment set up and what were the results?

Daniel: The first published description of what we now refer to as salvinorin A appeared in a 1982 paper by the Mexican phytochemist, *Alfredo Ortega*. At that time it was simply called *salvinorin*. In his paper, *Ortega* points out that salvinorin is structurally similar to compounds that had previously been isolated from the common ornamental bedding plant, *Salvia splendens*. This caught my eye early on in the days of my work with *Salvia divinorum*, and I was curious to see if *Salvia splendens* might produce any interesting effects similar to that of *Salvia divinorum*. So I purchased several *Salvia splendens* plants from a local nursery and tried smoking the dried leaves. After smoking a huge amount, I did not notice any effects other than a slight headache. I then made an extract of the leaves using the same procedure that I had been using to extract salvinorin A from *Salvia divinorum*. I experimented with this extract several times, using ever-increasing amounts, but was still unable to detect any effects. At this point I was convinced that *Salvia splendens* was inactive. Then a year or two later, I received e-mail from someone who claimed that he and a friend of his had tried *Salvia splendens* and found it to be active in very low doses. He sounded quite excited about his discovery and started posting messages on the Internet about it. He claimed that the leaves produced a sort of relaxing, anxiolytic, emotional-blunting effect. Obviously, these effects are not at all like *Salvia divinorum*. The effects he associated with *Salvia splendens* are rather like those of Valium®; it was not said to be a visionary herb by any stretch of the imagination. While I realize that such effects have their place, I personally do not find them very interesting. Nevertheless, this report intrigued me enough that I decided to try *Salvia splendens* again. Interestingly enough, when I did, I experienced exactly the kind of effects that he had described. However, for some reason, I was unable to experience these effects again on subsequent attempts, even though I tried using larger amounts of leaf. As this information was being posted in various places on the Internet, quite a few other people started experimenting with it. People's reports were mixed. Many people were reporting that they were experiencing sedative or anxiolytic effect, but others didn't seem to feel anything.

Because the reports were so inconsistent, I began to wonder if the "placebo effect" might be responsible for many of the effects people were experiencing, including my own. To investigate this, I decided to conduct an informal double-blind experiment using volunteers from the *Salvia divinorum* E-mailing List. This is an e-mail discussion forum I founded a couple of years ago, which is dedicated to *Salvia divinorum* and other psychoactive Labiatae. I located a source for a large amount of *Salvia splendens* leaf. In order to determine if this material would be suitable for use in the experiment, I sent samples of the doses I intended to use for the study to three people who had already tried *Salvia splendens* several times and claimed to be able to distinguish its effects. Unanimously they concluded that this material was indeed active and thus should be quite suitable for the experiment. I then selected a placebo herb. I chose *Viola odorata* leaf, because it was the most similar herb in appearance and texture that I could come up with that did not have effects that were likely to be confused with those that were being associated with *Salvia splendens*. I then sent out coded packets containing pre-measured doses of *Salvia splendens* and the placebo herb to 61 volunteers. They were instructed to ingest the samples and then to report any effects experienced on a questionnaire that had been provided to them. People were allowed to choose between smoking the herb samples or ingesting them sublingually. Some people chose to do both. So I collected two sets of *data* based on method of ingestion.

The purpose of the experiment was to determine if people would be able to distinguish *Salvia splendens* from the inactive placebo herb. If *Salvia splendens* does produce a significant effect, this should show up in the data obtained from the questionnaires. Unfortunately, only 31 of the volunteers completed the experiment and returned the questionnaires, so the amount of information I had available to work with was relatively small. Nevertheless, I think that the results are meaningful. The results of the experiment showed that most people reported no effects from either herb. Of those that did report "*Salvia splendens*-type effects" (about 35%), the numbers were essentially equal for *Salvia splendens* and the placebo. This suggests that *Salvia splendens* is no more effective than the placebo in producing "*Salvia splendens*-type effects." This is definitely the case for

the specific materials and doses used in this particular study.

After sharing the results of this study publicly, I received quite a few surprisingly emotional reactions from people who insisted that *Salvia splendens* was indeed quite active and that my study must be flawed. I got the feeling that people felt I was attacking their integrity by suggesting that they were victims of the placebo effect. It is clear that this herb produces effects in many people when they *know* that they are taking it. The fact that many people are convinced of its effects is compelling. The problem is that the activity seems to disappear when people *don't know* what it is they are taking. The information available suggests that the effects people have been reporting are probably due to psychosomatic factors rather than a true pharmacological action of the herb; however, I don't mean to suggest that this small study in any way closes the book on the pharmacology of *Salvia splendens*. Further research may very well identify some sort of activity that was not observed in this particular experiment.

Will: Do you think *Salvia divinorum* will avoid being scheduled?

Daniel: I'd certainly like to think so. The nature of its effects are just too profoundly bizarre and ontologically challenging for it to ever become very popular. It is clearly not habit-forming, nor does it produce any form of dependence. If anything, it has the reverse effect. The majority of people who try *Salvia divinorum*, do so out of curiosity, but after one or two full-blown experiences decide that there are better things to do for fun. It will never become widely used or cause the kind of social problems that have resulted in other plants becoming illegal. But then again, the scheduling of drug plants is sometimes unpredictable and illogical. For example, it doesn't make sense that obscure and relatively benign plants like *Tabernanthe iboga* and *Catha edulis* are illegal, while other far more available, powerful, and clearly dangerous plants like the *Daturas* and other hallucinogenic nightshades remain quite legal.

It is very important that people who experiment with *Salvia divinorum* are properly educated about its effects so that they can use it intelligently, safely, and hopefully in a way that is

personally valuable and meaningful.

People who provide this herb to others must accept the responsibility of educating prospective users. I am concerned about the fact that there are unscrupulous entrepreneurs who see this plant as nothing more than a way to make a fast buck and seem to care nothing about what happens to the people who use it. If these people begin exploitatively mass-marketing it as some sort of "great new high" to uneducated, unprepared consumers, problems could arise that would bring the plant some serious negative attention. *Salvia divinorum* is a precious and sacred plant. It would be very sad to see it criminalized.

Will: At the 1997 Mind States conference, Terence McKenna had this to say about *Salvia divinorum*: "I don't believe the establishment is interested in demonizing and criminalizing a new, easily grown, widely available psychoactive plant. I don't think the establishment needs a new *Cannabis*." Do you agree with this statement?

Daniel: Well, I think it is rather difficult to anticipate the interests of the establishment, but *Terence* is correct in the sense that it would be impossible to enforce a law that made *Salvia divinorum* illegal. It would be a tremendous waste of resources and would not accomplish anything positive. Unlike *Cannabis*, *Salvia divinorum* is both shade-loving and very inconspicuous looking. By planting it amongst other plants or beneath trees it can be grown almost invisibly. There are several ornamental *Salvia* species that look almost identical to *Salvia divinorum*, so identifying an illegal *Salvia* plant would be a major problem. It is a rapidly growing, easily propagated plant that can be harvested at any stage in its life cycle. It is very easy to grow indoors, since there is no need for expensive high-wattage lighting. If *Salvia divinorum* were made illegal, most people would just move their plants indoors. Unlike *Cannabis*, there would be no tell-tale odor or high electric bills to worry about.

Will: What is your preferred method of ingesting *Salvia divinorum*? Do you have a ritualized context that you take it in?

Daniel: Actually, I have several preferred methods of ingestion. I am fascinated by the extremely intense and often bizarre, but brief experiences that can be achieved by smoking, and I also enjoy the longer lasting, slowly unfolding type of experiences produced when the leaves are chewed using the quid method or when using a sublingually absorbed extract. When smoked, the full dose is delivered rapidly into the bloodstream. This method produces effects that begin very rapidly, producing almost no "alert." Peak effects are experienced in less than a minute. The peak state lasts for some 5-10 minutes, then subsides over another 20-30 minutes. When *Salvia divinorum* is ingested orally, salvinorin A is absorbed gradually into the blood stream. The effects build over 15-30 minutes, peak for 1-2 hours, then gradually diminish over an additional hour or two. Both kinds of experiences can be tremendously rewarding. Oral ingestion provides a more gradual entry into the experience, which makes it easier to get one's bearings and to adjust to the changes of consciousness that are occurring. The greater duration of the effects provides more opportunity to explore and learn from the experience. However, sometimes the shorter duration of effects achieved by smoking is more desirable, because it requires less of a time commitment, and since the effects are so brief, one can risk diving in further, with the assurance that one will quickly return to the surface.

For smoking purposes, I definitely prefer to use a highly concentrated form of salvinorin A, rather than plain leaves. I see no virtue in inhaling the massive quantities of smoke that are necessary to reach a high level of effects when smoking the leaves in their natural state. In the past I worked with pure salvinorin A; however, I no longer use it in this form, because a single dose is so minute that the mechanics of handling it are problematic. What I usually use for smoking these days is a salvinorin A-fortified leaf-preparation that contains 1 mg salvinorin A that has been deposited on 25 mg *Salvia divinorum* leaf. This can be smoked easily in an ordinary pipe, and because it is so highly concentrated, one only needs to inhale a tiny wisp of smoke. When using the quid method, I prefer to use fresh leaves rather than dried ones. There is something very satisfying about consuming the leaves fresh off the plant, while they are still crisp, juicy, and full of vitality. I also enjoy using a sublingual extract. This produces

the same type of experience as the quid method, but eliminates the cumbersome bulk and bitterness of the leaves.

I do incorporate various elements of ritual in my *Salvia divinorum* sessions. Rituals utilize external actions that function through symbolism and metaphor to influence inner experience. I use ritual to prepare the inner environment. Essentially, to help create the sort of mental "set" that is conducive for a positive and productive experience. I won't go into every type of ritual I use, but I will describe the one I use most often: defining sacred space. The way that I like to do this is to burn white sage or copal and then to use the fragrant smoke to describe a circle that encloses the area where the session will take place. This is a simple, but extraordinarily powerful act. It creates a container for the session and promotes a sense of inner preparedness and respect for what one is about to do. It formally acknowledges the beginning of the session and signals the time for increased commitment and focus.

Will: Thanks for taking the time to share some of your thoughts and experiences with us.

A NEW SPECIES OF SALVIA FROM MEXICO

BY

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¹Herbarium, Department of Botany, University of California, Los Angeles, California.
(HTML by Arachnophilia)

In the course of his studies of narcotic plants in southern Mexico, Mr. R. Gordon Wasson became interested in a member of the Labiatae which is employed by the Mazatec Indians of Oaxaca as a psychotropic drug.

An examination of material from the Mazatec country indicates that the plant in question is an undescribed species of *Salvia*:

Salvia divinorum (Dusenostachys) *Epling & Játiva sp. nov.*

Herba perennis altitudine 1 m. et ultra, caulibus pilis plus minusve articulatis pubescentibus; foliorum lamininis plus minusve ovatis, 12-15 cm. longis, in apice acuminatis, in basi plus minusve rotundatis et ad petiolos 2-3cm. longis attenuatis, ad margines crenato-serratis et in sinibus hirtellis, paginis ambabus glabratis nisi inferiore ad venas hirtella; floribus in verticillastris sat distantibus ut videtur in paniculis amplis, ramis 30-40 cm. longis cyaneopuberulis; pedicellis gracilibus 8-9 mm. longis; calycum cyaneorum glabrorum tubo in maturitate 15 mm. longorum labia superiore 1.5mm. longa, imprimis 3-venia; corollarum cyaneorum sigmoidearum tubo 22mm. longo, intus nudo, labia superiore 6mm. alta, inferiore ut videtur brevior et incurva; staminibus ad fauces positus, inclusis, gubernaculo integro; stylo hirtello, ramo postico paulo longiore obtuso plano, antico ut videtur carinato.

México, Estado de Oaxaca, San José Tenango, in the Sierra Mazateca; in ravines with black soil marginal to the wet forest, September 8, 1962, A. Hoffman & R.G. Wasson, s.n. (Type in Herb. Univ. Cal., Los Angeles; Duplicate Type in Econ. Herb. Oakes Ames).

Salvia divinorum is allied to *S. cyanea* Lamb. ex. Benth., which is found in central Mexico. The former differs from the latter principally in respect to leaf shape (the attenuation of the blade) and the flattened upper style branch. The bracts of *Salvia divinorum* appear to be tardily deciduous. The species is doubtless striking in its habitat and might possibly be valuable if introduced into horticulture.

The specific name, which means "of the seers," refers to the curious use to which the plant is put by the Mazatec Indians and which Mr. Wasson describes in the following pages. [The R. Gordon Wasson article "[A New Psychotropic Drug from the Mint Family](#)," follows this description in the Botanical Leaflet Series – Arachnid..]

[Gordon Wasson and Albert Hofmann, in addition to herbarium specimens of *Salvia divinorum*, took a living plant to Dr. Epling in 1962. Epling was an expert on New World *Salvia* species, and had written a monograph of the *Salvia* subgenus *Calospatha*. He assigned *Salvia María Pastora* to the section

Dusenostachys of the Calosphace. It is thanks to Epling's interest in growing the plant that the so-called Wasson clone was propagated at various California University Botanical Gardens and eventually escaped into the countryside, becoming somewhat invasive throughout the United States over the past decades – Arachnid.]

A New Mexican Psychotropic Drug from the Mint Family¹

by R. Gordon Wasson²

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(Originally OCR'd by GluckSpilz – later corrections by Arachnid)

For a number of years we have been exploring the highlands of southern Mexico in a study of the role played by hallucinogenic mushrooms in the religious life of the Indians. We began by visiting the Sierra Mazateca in 1953, in the northernmost part of the state of Oaxaca, returning there in 1955 and every year thereafter through 1962. At an early date we learned of a psychotropic plant that the Mazatecs consume when mushrooms are not available. But as we and our collaborator Roger Heim were concentrating on the difficult task of locating and identifying the various species of hallucinogenic mushrooms, we had to neglect for some time this plant that the Indians employ as a less desirable substitute. In 1960 and 1961, we brought back specimens and submitted them for determination to Schultes and to Epling. All of the specimens available proved to be unsatisfactory for specific identification. Finally in September and October of 1962, satisfactory herbarium material reached us. when we were in San José Tenango, on which Dr. Epling could base his specific description. Tenango, at about 1200 meters altitude, is close to and above the *tierra caliente* of Vera Cruz.

We now identify a species of *Salvia* new to botanists, *S. divinorum* Epling & Játiva, as a psychotropic drug used traditionally by the Mazatec Indians of Oaxaca, Mexico, in their divination rites. To the ever growing family of Mexican *phantastica* a new member is thus added, and for the first time a species of the Labiatae joins this interesting group.

The plant is familiar to virtually all Mazatecs. In Huautla de Jimenez (1800 meters) we saw two or three plants growing, and a specimen taken to Mexico City is still alive there in the open air; but these plants do not flower. We have never seen the seeds, and no Indian has been able to tell us about them. The plant is reproduced vegetatively from a shoot stuck into the ground. It requires black soil, rather than clay, and for the plant to prosper moisture must be steady. Many, perhaps, most, Mazatec families possess a private supply of the plants, but almost invariably they are not near the home nor near trails where the passers-by might see them. We were on the watch for *Salvia divinorum* as we criss-crossed the Sierra Mazateca on horseback in September and October of 1962, but never once did we see it. The Indians choose some remote ravine for the planting of it and they are loath to reveal the spots. No Indian in San José Tenango was willing to take us to the plants whence the brought back specimens to us. *Salvia divinorum* seems to be a cultigen; whether it occurs in a wild state (except for plants that have been abandoned or have escaped) we do not know.

In former times the proprietors of land paid no attention to growths of hallucinogenic mushrooms and *Salvia divinorum*; but in the last four or five years the market for the mushrooms and the possibility of a market for the *Salvia* have made them conscious of a potential value here. Several episodes have recently taken place in the vicinity of Huautla in which the owner has enforced his right to the plants.

The Mazatecs who speak Spanish refer to *Salvia divinorum* as *hojas de la Pastora*, or *hojas de María Pastora* ("leaves of the Shepherdess" or "leaves of Mary the Shepherdess"), and this is also the translation of the name in Mazatec³: *ška⁴ Pastora* (³The superscript digit indicates the tone of the syllable, which is the lowest of four tones in Mazatec).

The Mazatec name is curious. In Christian tradition the Virgin Mary is not thought of as a shepherdess. Is the "Pastora" concept a survival of the pre-Christian *dueño de los animales*, "the Lord of the animals," that figures large in the folk tradition of the Middle American Indians? A pagan association would thus be sanctified by the addition of the Virgin's name.

Salvia divinorum is, in the minds of the Mazatecs, only the most important of several plants, all Labiatae, that they regard as members of the same "family." *Salvia divinorum* is known as *la hembra*, "the female." *El macho*, or "the male" is *Coleus pumila*, of European origin. Then there is *el nene*, "the child," and *el ahijado*, "the godson," which are both forms of *Coleus Blumei*. Some Indians insist that these others are likewise psychotropic, but we have not tried them; others say these are merely medicinal.

We have found no reference to the use of the leaves of *Salvia divinorum* in the 16th and 17th Century writers. We have found only two passages that may refer to them in modern writers. Dr. Blas Pablo Reko, a pioneer in Mexican ethnobotanical field work,

discussing the hallucinogenic mushrooms, adds (*Mitobotánica zapoteca*, Mexico, 1945, p.17) a sentence that, translated, says:

We cannot fail to mention here another magic plant whose leaves produce visions and which the Cuicatecs and Mazatecs (in the districts of Cuicatlán and Teotitlán) call "divination leaf." The loose leaves that I have received do not permit their scientific identification.

This refers probably to the *Salvia divinorum* of the Mazatecs. There is a longer reference in a paper by Ing. Robert J. Weitlaner ("Curaciones Mazatecas" in An. Inst. Nac. Anthropol. Hist. 4, No. 32 (1952) 283). While Weitlaner was in Ojitlán, a Chinantec village, he encountered a native of Jalapa de Díaz, a neighboring Mazatec town, who told him of the use among his fellow townsmen of a plant known as Yerba de María. This informant's account, in a shortened paraphrased translation, follows:

Yerba María resembles somewhat the *yerba mora*, but it has slightly wider leaves. Only the leaves are used, putting them in water. First the leaves are rubbed together in the hands, the water is not boiled, and they are used for very specific purposes. When the *curandero* goes to the forest in search of this plant, before cutting it he must kneel and pray to it. They are not witch-doctors; but the leaves are cut only when they are needed, after praying.

For example, if someone is suffering from a sickness, and the doctors do not know what is the matter, then with this plant they divine the disease. The *curandero* who brings the leaves first asks the sick person if he is addicted to taking alcohol, because, when a man does not take alcohol, fifty leaves are prescribed; when he takes alcohol, then 100 leaves are prescribed. The sick person drinks the water in which the leaves have been rubbed. At midnight, the *curandero* goes with him and another person to a place where there is no noise, as for example an isolated house, where the patient takes the potion. They wait 15 minutes for the drug to take effect, and the patient himself begins to state the kind of sickness from which he suffers. The patient finds himself in a semi-delirious state, he speaks as in a trance, and the others listen attentively to what he says. He shakes his clothes, as though with the aid of the plant he would free himself from the little beasties [presumed cause, in the Indian mind, of the illness]. At dawn the *curandero* bathes the patient with the water of which he has drunk, and thereupon the patient is cured.

People say that with this bath goes away the drunken state produced by the plant that the patient has taken.

When is it a question of theft, or a thing lost, the *curandero* listens to what is said by the man who has taken the plant, and thus the facts are disclosed.

There is in Jalapa de Díaz an individual named Felipe Miranda, who every three or six months goes to the mountains to gather the plant. He makes wonderful cures and finds himself in good economic situation. They say he cultivates and tends to the plant, but he does not reveal the kind of plant that it is.

The identification of *Salvia divinorum* is long overdue. The plant is present the whole year round, and the Mazatecs do not hesitate to discuss it, since they are much less inhibited with respect to this plant than they used to be when talking about the sacred mushrooms. In recent years Huautla has changed greatly, the highway having reached there in 1958-9 and the new-born traffic in the psychotropic mushrooms having its focus there. Among the visitors to Huautla there have been a number of botanists and mycologists. In Mexico City the *hojas de la Pastora* are a frequent theme of discussion in botanical circles. It is hard to understand how the plant has avoided classification until now.

So far as our information goes, the area of diffusion of the *hojas de la Pastora* is confined to the Mazatec country and possibly the immediately contiguous Cuicatec and Chinantec areas. But it may well be known and used elsewhere. We shall await with curiosity the reports of informants from other regions following the publication of this article. *Ololiuqui* (*Rivea corymbosa* (L.) Hallier filius) is known among the Mazatecs, but they seem to prefer for divination the *hojas de la Pastora* to the *semilla de la Flor de la Virgen*, "Seed of the Flower of the Virgin," as the Mazatecs call *ololiuqui*.

On Wednesday, July 12, 1961, I ate the "hojas de la Pastora" and experienced their effects. I was in Ayautla, stopping in the home of Doña Donata Sosa de García. She introduced me to a number of *curanderas*: Augustina Borja, Clementia Unda, María Sebastiana Carrera, and Sara Unda de la Hoz.

On the evening of that day, the first two came to the house shortly before 11 o'clock, and Augustina Borja performed the ceremony

in a large spare room. Those present were Irmgard Weirlaner Johnson, my daughter Mary X. Britten ('Masha'), Doña Donata, and her daughter Consuelo ('Chelo'). Augustina Borja was the daughter of a *curandero* who had died about ten years before. Her own daughters often accompany her on her healing visits and are themselves budding *curanderas*. On the evening that we spent with her, she came along with Clementina Unda. They were careful to orient themselves to the east as they set the stage for the ceremony. In the Mazatec country rites are always so orientated or as near as possible in that direction; never to the west, which is considered sinister. Augustina was performing—she took the mushrooms, rather than the *hojas*; these I had requested especially as I had never taken them. Both mushrooms and leaves are counted in pairs. The leaves are paired off, care being exercised to assemble leaves that are flawless, without parasitic growths. In preparation for the ceremony, the leaves are placed on top of each other, each pair being face to face. It is customary for the Indians to consume the leaves by nibbling at the dose with their incisor teeth. This proved to be impossible for me, owing to the taste; and I was treated as a toothless person. There being no *metate* (stone grinding board) handy, Augustina squeezed the leaves with her hands and collected the juice in a glass. This was certainly an inefficient method. Some water was added. I drank the dark fluid, about half a glass full, the result of squeezing 34 pairs or 68 leaves in all. I was told that frequently Indians vomit on eating the leaves, which is easy to believe. It was possible for me, however, to retain the fluid.

After having eaten her mushrooms, without more ado our *curandera* launched into singing, intoning in Mazatec with vigor. She kept this up for two hours, in a rather monotonous voice. I tape-recorded her singing but have yet to find someone who will give a rendering in English or Spanish.

The effect of the leaves came sooner than would have been the case with the mushrooms, was less sweeping, and lasted a shorter time. There was not the slightest doubt about the effect, but it did not go beyond the initial effect of the mushrooms—dancing colors in elaborate, three-dimensional designs. Whether a larger dose would have produced a greater effect, I do not know.

A day or two before the events that I have narrated, the curandera María Sebastiana Carrera had supplied us with many details about the use of the leaves and had even chanted the words of the ceremony after her usage. She had declined to admit us to an actual ceremony because her neighbors (and doubtless she herself) would have considered the performance before outsiders a desecration and scandalous. Even as it was, when her session with us was drawing to a close, she burst into uncontrollable tears, fell on her knees, and begged forgiveness for what she had done. She had also given us valuable cosmological legends that are still believed in among the villagers, which I hope to publish elsewhere.

On October 9, 1962, our party was in San José Tenango. This time it consisted of Dr. Albert Hofmann, his wife Anita, Irmgard Weitlaner Johnson, Herlinda Martinez Cid (who served as Mazatec interpreter), and me. Through the good offices of Roberto Carrera, the son of Aurelio Carrera of Huauntla, we were introduced to Consuelo Garcia, about 35 years old, a vigorous, good-looking curandera, who that night performed for us a divinatory rite. She used only the leaves, not mushrooms. She ground them on her *metate*, after passing them through the smoke of *copal*, and she did a thorough job of it. Water is added to the mass that comes off the metate, the whole is put through a strainer, and then we drank the liquor. I took the juice of five pair and Mrs. Hofmann of three pair. We both felt the effects, which were as I described them in the ceremony in Ayautla the year before.

It would seem, in summary, that we are on the threshold of the discovery of a complex of psychotropic plants in the Labiatae of Mint Family. We know that *Salvia divinorum* is so employed in the Sierra Mazateca, and *Coleus pumila* and two "forms" of *C. Blumei* are said by some of the Indians to be similarly used.

R. Gordon Wasson

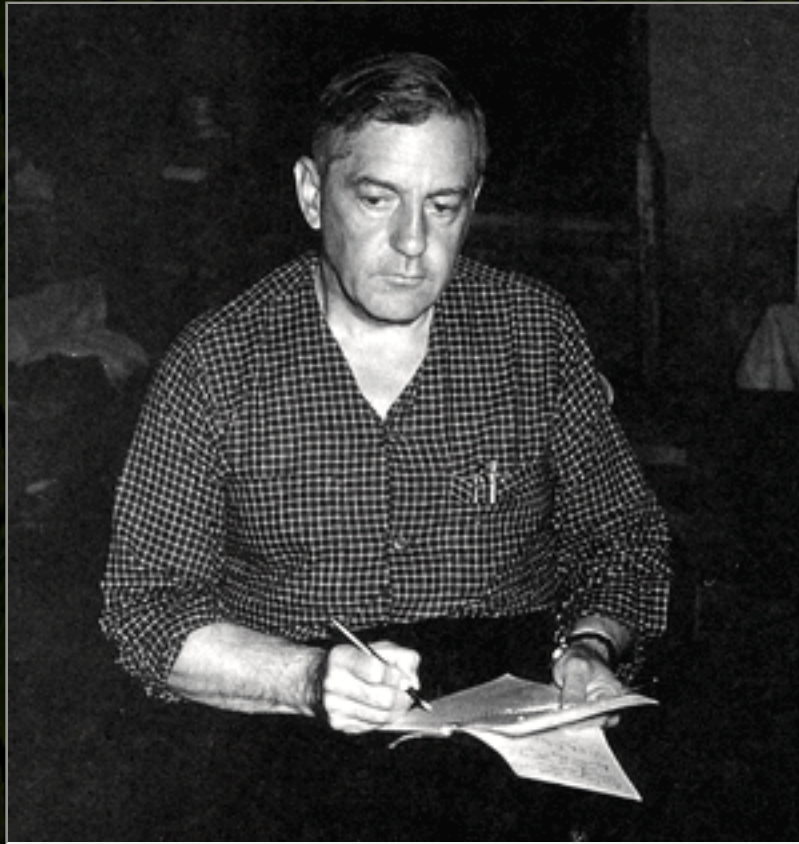
Gordon Wasson in Mexico (1955)

Photo by Allan B. Richardson. Courtesy Wasson Collection.

The *Salvia divinorum* Research and Information Center

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

R. GORDON WASSON

from **Botanical Museum Leaflets, Harvard University**,
Vol. 20, No. 6, Nov. 22, 1963, pp. 161-212.

Picietl | *Peyotl* | *Teonanacatl*
Pipiltzintzintli | *Ololiuhqui* | *Tlitliltzen*

Picietl, peyotl, teonanactl, and ololuihqui- 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 only 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 prevailing 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 pre-eminent.

The civilization of Europe had known nothing like these novel drugs of Mexico, at least not in recorded history. Similar miraculous 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 machinations of the Evil One. Root and branch, the Church strove to extirpate 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 garden 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 has it that in certain places the priest is the leading curandero.

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.

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Picietl -- Nicotiana rustica L.

The bright green powder of picietl leaves is familiar all over the Indian country in Mexico. The curandero rubs it on the skin, over the forearms, temples, stomach, legs. It is this that constitutes a *limpia* 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 *yetl*, the former alone was *picietl* (now in the vernacular *pisiete*), the latter alone was *quauhyeyl*. 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: 'canoe', '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 neighboring barbecue, were destined to be exterminated by the ferocious Caribs and the Europeans! ⁽²⁾

The use of tobacco spread throughout the world with epidemic 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 abbe with his snuff box is a familiar figure in Europe's cultural history.

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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, ⁽³⁾ 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 Queretaro. Presumably the plant in colonial times grew only in the north, but its use extended south as far as the state of Oaxaca. ⁽⁴⁾ Today the Indians of central and southern 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 invoke the police and courts to stop a practice that gives spiritual solace to our surviving Indian population.

On a different cultural plane, peyote 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 (1891), men who commanded wide attention in the English-speaking world.⁽⁵⁾ 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.⁽⁶⁾

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.⁽⁷⁾ The question presents itself seriously whether the output of articles can be laid 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 ⁽⁸⁾ 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 *mezcal*, derived in its turn from Nahuatl *mexcalli*, the name for the agave, maguey, or century plant from which pulque is made, which, when distilled, yields *mezcal*. *Mezcal* has nothing to do with 'mescal buttons' or 'mescaline'. 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 mejicanismo that has largely escaped the lexicographers: piule, a generic name in Mexico for the hallucinogens. J. J. Santamaria 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 Augustin Loxicha: piucle de barda, piule de cheris, these being distinct species of such mushrooms, or simply piule.⁽⁹⁾ Does it not stem from peyotl, thus:

peyotl/peyutl --> peyule ---> piule.

As Dr. Aguirre Beltran 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.

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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', [\(10\)](#) the sacred mushrooms of Middle America. Bernardino de Sahagun 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. [\(11\)](#) Virtually no one challenged him. In a world indifferent to such matters, torn by warfare, his arguments won 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. [\(12\)](#) 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 Jiminez. 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 Jose Dorantes. Johnson later gave a full account of the event. [\(13\)](#) 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. *mazatecorum* Heim. (14)

Dr. David Linder, Harvard mycologist, confirmed another as *Panaeolus campanulatus* L. var. *sphinctinus* (Fr.) Bresad. Some time later the third species was identified at Harvard by Dr. Rolf Singer as *Stropharia cubensis* Earle, (15) 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 anthropology, which we called **ethnomycology**, 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. Without minimizing what we owe to others, I rejoice that this occasion presents itself when I may properly define my debt to him.* He led us by the hand on our first excursion on muleback into the Indian country, to Huautla de Jimenez; on my second trip to Mazatlan de los Mixes; then on my visits to San Augustin Loxicha in the Sierra Costera, and to the Mazahua country. For ten years I have had repeated recourse to him, to tap his immense knowledge of the Indians, their ways, their languages, their history. He has guided my steps in the libraries, unearthed apt quotations in the sources bearing on our theme, introduced me to others working in the field who could also pin down facts. His patience, good

humor, and joie de vivre, in the Sierra and in Mexico City, are unfailing. But above all else I have tried to learn from him his secret of dealing with the Indians.

**This paper was written in honor of Robert J. Weitlaner on the occasion of his 80th birthday and will be published in Spanish in the Homenaje edited under the auspices of a committee headed by Dr. Alfonso Caso in Mexico City.*

The Indians are simply living by the conventions of an orally transmitted culture such as our own forebears lived by only a little while ago. When you visit their villages you make allowances for this time lag. You do not treat them kindly as inferiors or children. You do not treat them "as though" they were equals. The Indians are quick to see through such fronts. Ing. Weitlaner taught us to treat the Indians as equals--a secret simple yet elusive. As the poet said, truly 'this is the famous stone that turneth all to gold.'

The news of the Mexican sacred mushrooms burst upon the world in the spring of 1957 with the publication of our book, **Mushrooms, Russia & History**, and our articles in the popular magazines.⁽¹⁶⁾

Roger Heim, Membre de l'Institut, Director of the Museum National d'Histoire Naturelle, visited the Indian country of Mexico three times in response to our invitation, seeking out the sacred mushrooms. He identified fourteen species belonging to three genera--Psilocybe, Stropharia, and Conocybe--besides a number of subspecies. Most of them were new to science, although they had been known to the Indians for centuries, probably millennia. Dr. Albert Hofmann in the Sandoz laboratories of Basel undertook the delicate task of isolating the active agents, defining their molecular structure, and finally synthesizing them. By 1958, a surprisingly short time, he had accomplished his work. Many investigators began to study the properties of psilocybine and psilocine, as Dr. Hofmann called the active agents, and their possible use. In a recent bibliography I have listed some 200 papers on work with these mushrooms that have already appeared in the past five years, in learned and scientific journals;⁽¹⁷⁾ 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.

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Pipiltzintzintli -- Salvia divinorum Epling & Javito

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 Sahagun and Juan de Cardenas refer to a plant that they call respectively

poyomatli or poyomate,⁽¹⁸⁾ grouping it with other hallucinogens. Its identity is unknown. In his **Medicina y Magia**, Dr. Aguirre Beltran 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 pipiltzintzintli.⁽¹⁹⁾

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 pipiltzintzintli 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 Jativa named it *Salvia divinorum*.⁽²⁰⁾ 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 pipiltzintzintli, 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 *Rhynchosia pyramidalis* (Lam.) Urb. Though 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 Tlaloc (*Editor's note: pictured above in the opening graphic*), and where some of the seeds are red and black, with the hilum distinctly placed in the red held.⁽²¹⁾

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 *colorinw* (*sic*) and much used for beads by the Veracruzanos.

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Ololiuhqui -- *Rivea corybosa* (L.) Hall. fil.*

See [note by R. E. Schultes](#)

The least known in the outside world of our quartet of major Mexican divinatory agents is ololiuhqui, yet it is perhaps the best known and most widely used among the Indians of that country. In the race for world attention ololiuhqui 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 teonanacatl and peyotl. Its identity was settled in 1941. The enigma of its chemistry was resolved in 1960 when, on August 18 of that year, Dr. Albert Hofmann read his paper in Australia before an audience of scientists, many of whom were plainly incredulous, so astonishing were his findings. (22)

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 *bejicco* 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. (23) It is the seed of a species of Convolvulacne: *Rivea corymbosa* (L.) Hall. hi.

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's 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 ololiuhqui receives frequent mention, especially in the *Tratado* of Hernando Ruiz de Alarcon. 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 ololiuhqui. 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.

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Tlitliltzen -- 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 Totnis MacDougall published his discovery that in various parts of Oaxaca, especially in the Zapotec area, another seed is used exactly as ololiuhqui is. [\(24\)](#) This is the seed of a second morning glory, *Ipomoea violacea* L. In Zapotec ololiuhqui 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 ololiuhqui, since this term means the 'round things' or 'pellets'.

The Nahuatl must have known them: what then did they call them? We believe the answer is to be found in Pedro Ponce's (sic) **Breve Relacion de los Dioses y Rites de la Gentilidad**, Par. 46, where he speaks of ololiuhqui, peyote, and tlitliltzin, all with the same magic properties. The third, possibly a hapax in the corpus of surviving classic Nahuatl documentation, is clearly not ololiuhqui, since both are mentioned in the same sentence as distinct products. The word comes from the Nahuatl root meaning 'black', with a reverential suffix. May we not assume that this was the name current in classic Nahuatl for the black seeds that Don Tomas found in wide use among the Zapotecs 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 ololiuhqui del moreno, which Dr. Aguirre Beltran thinks was his way of saying 'black ololiuhqui'. But since this Negro was obviously a stranger both to Nahuatl and to Spanish, little can be deduced from his terminology. [\(25\)](#)

Note by R. E. Schultes:

**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 ololiuhqui. 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 Convolvulaceae, H. D. House (House, H. D.: The North American species of the genus Ipomoea in Ann. N.Y. Acad. Sci. 18 C19083 259), that both names actually refer to one polymorphic species. In this case, then, the older name is Ipomoea Violacea L. Sp. P1. (1753) 161, which should be used in preference to its synonym I. tricolor Cav. Ic. P1. Rar. 3 (1794) 5, t. 208.*

According to Don Tomas, in San Bartolo Yautepec, a village of the Sierra Costera, only the black seed is used, but in many villages 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.⁽²⁶⁾

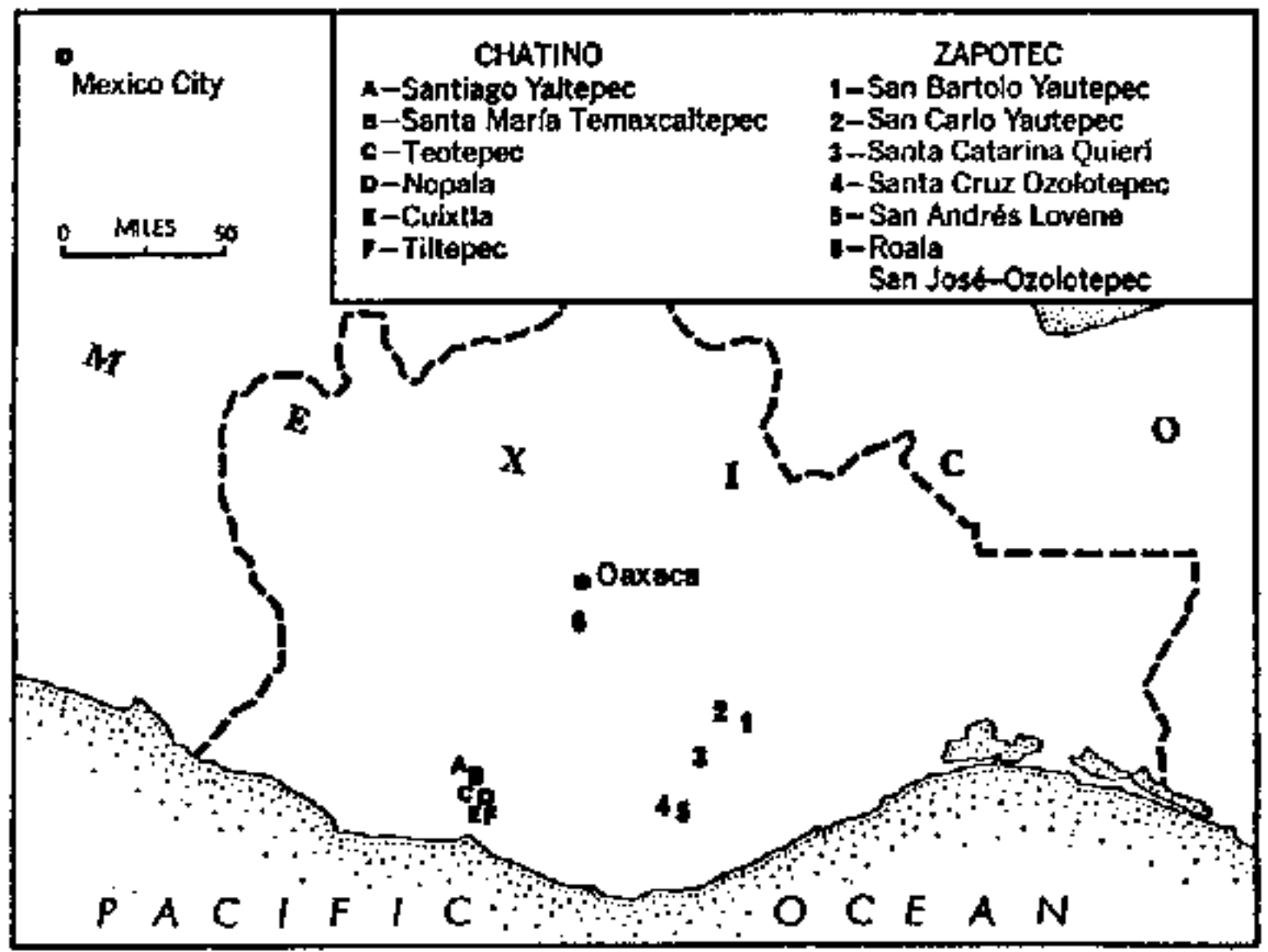
These negative results may be explained by inadequate preparation. The Indians grind the seeds on the metate (grinding stone) until they are reduced to flour. Then the flour is soaked in cold water, and after a short time the liquor is passed through a cloth strainer and drunk.

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.

Don Tomis 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 Tomas, 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.⁽²⁷⁾ 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 Yautepec they are called la'aja shnash, 'seed of the Virgin'. In this town Francisco Jimenez ('Chico Bartolo') took a series of photographs in the course of a routine vigil.

A relative of his, Paula Jimenez, 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.

First, the person who is to take the seeds must solemnly commit himself to take them, and to go out and cut the branches 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 Nesters 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 hear 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.⁽²⁸⁾ In 1968, in Ayautla and also in San Jose 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 Zapotecs of San Bartolo Yautepec, 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 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 ninos*, 'the children', and *las hombrecitos y las mujercitas*, 'the little men and the little women', and *los senioritos*, 'the lordlings'. Marina Rosas, curandera of San Pedro Nexapa, on the slopes of Popocatepetl, called the sacred mushrooms in Nahuatl *apipiltzin*, '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 *pipiltzintzintli*, 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 Beltran translates it as 'the most noble Prince' and relates it to *Piltzintli*, 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 Chapter XV:3 about *ololiuhqui* and *peyotl*:

come para algunas medicinas es menester molerlo, dicen que para que haga este effecto a de ser molido por mano de doncella.

Nor is this citation unique. An Indian afflicted in his nether limbs was told to take *pipiltzintintli* : (29)

que la Rabia de beber molida por una dancella, desleida en agua tibia, en ayunas, habiendo confesado y comulgado antes de tomarla y ayunado vienes y sabado y el dia siguiente beberlo en el nombre de la Santisima Trinidad y de la Virgen de Guadalupe y de San Cayetano · · Y que el aposento habia de estar muy abrigado, sin Iuz, ni aire, ni ruido, y que no se habia de dormir, sine estar en silencio aguardantlo a ver dichas figuras (un viejecito vestido de bianco y unos muchachos pequenitos vestidos del mismo color) que ellas lo untarian y desenganarian si tenia remedio su mat o no.



*(Top) Young girl grinding sacred mushrooms (*P. mexicana* Heim) in juxtlahuaca, Oaxaca, in Mixteca). 1960.*

*(Bottom) Young Girl grinding *Salvia divinorum* leaves, Ayautla, Sierra Mazateca. Sept. 1962.*

Photos by Wasson

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.⁽³⁰⁾ 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 3000 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 Juxtla- huaca 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 2500 years !

NOTES

Picietl | *Peyotl* | *Teonanacatl*
Pipiltzintzintli | *Ololiuhqui* | *Tlitliltzen*

Abbreviations :

AGN: Archive General de la Nacion, ramo Inquisicion.

**AB: Gonzalo Aguirre Beltran: Medicina y Magia, 1955, Mexico.
Later edition, Institute Nacional Indigenista, 1963.1**

(A thoughtful monograph with numerous quotations from AGN, indispensable for every student of its subject.)

1. *vide*, e.g., **AGN**, vol. 340, folios 354-359. [RETURN](#)

2. The Caribs were also called Canibs or Calibs. From 'Canib' the English-speaking world derived 'cannibal', which it prefers to 'anthropophage'.

Shakespeare in his Tempest took his foul monster Caliban from the 'Calibs'. [RETURN](#)

3. There is a well known sentence in Sahagun, Bk. X, Chapter XXIX, 2, that is usually read as follows:

'Hay otra hierba come tunas de tierra que se llama peyotl ...'

According to Professor Charles E. Dibble, the Florentine Codex, folios 129v-130r, reads thus:

'Ay otra yerva, come turmas de tierra, que se llama peyotl ...'

Turmas is a Spanish word of ancient lineage and obviously makes sense. *vide* Joan Corominas: *Diccionario Critico Etnologico de la Lengua Castellana*, entry *turmas*. [RETURN](#)

4. **AB**, Chapter 7, Area Cultural y Foco de Difusion. [RETURN](#)

5. Louis Lewin | S. Weir Mitchell | Havelock Ellis

a) Lewis Lewin: 'Uber Anhalonium Lewinii', *Arch. fiir experim. Path. und Pharma.*, 24:401: 1888. This article also appeared in translation in the same year in the *Therapeutic Gazette*, London. In these initial articles there was a misunderstanding about which species of cactus peyotl was.

b) Havelock Ellis: 'A Note on Mescal Intoxication.' *The Lancet*, Number 3849, June 5, 1897.

c) S. Weir Mitchell: 'Note upon the Effects of Anhalonium lewinii.' *Brit. Mrd. Jorcmnl*, Dec. 5, 1896.

After their initial papers these three authors continued writing on the subject in books and articles. Lewin in his 1888 paper did not report on human experiences with peyotl: the first such report appeared in *The Therapeutic Gazette*, on Sept. 16, 1895: 'Anhalonium Lewinii (Mescal Buttons). A study of the drug, with especial reference to its physiological action upon man, with report of experiments', by D. W. Prentiss and Francis P. Morgan. [RETURN](#)

6. Now published as one volume by Harper, in paperback (Colophon series) and hardcover. [RETURN](#)

7. *vide* Weston La Barre: 'Twenty years of peyote studies', *Current Anthropology*, Vol. 1, Number 1, Jan. 1960. To be included in a second reprinting of La Barre's *The Peyote Cult* (originally Yale University Publications, Number 19) by Shoe String Press, Hamden, Conn., August, 1964, with an added chapter bringing the research up to date. [RETURN](#)

8. **AB**. Chapter 7, Etimologia [RETURN](#)

9. *vide* V. P. Wasson and R. G. Wasson: **Mushrooms, Russia and History**, Pantheon Books, N.Y., 1957, pp. 311, 313, and 315. [RETURN](#)

10. 'Teo' means 'god' in Nahuatl; no Nahuatl 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.

'Nanacatl' 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 Nahuatl scholar disputes it. [RETURN](#)

11. 'Identification of the Teonanacatl, or Sacred Mushroom of the Aztecs, with the narcotic 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. [RETURN](#)

12. For Reko references, *vide* my bibliography on the hallucinogenic mushrooms published in the Botanical Museum Leaflets, Harvard University, Sept. 7, 1962, Vol. 20, Number 2, Entries 144-147. Second edition, with corrections and addenda, March 10, 1963, Number 2a. [RETURN](#)

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 hierba Muria for divination purposes. This is surely the plant that we have called hojas de Muria, 'leaves of the Virgin Mary', and that has lately been named Salvia divinorum Epling & Jbtiva: we suppose it is the pipiltzintzintli of Colonial Nahuatl.

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', Anales de INAH, Vol. IV, Number 32, 1949-50. [RETURN](#)

14. *vide* Harvard Botanical Museum Leaflets, Feb. 21, 1939, Vol. 7, Number 3, page 38 fnt. [RETURN](#)

15. *vide* Roger Heim and R. Gordon Wasson: Les Champignons Hallucinogenes du Mexique, Archives du Musium National d'Histoire Naturelle, Series 7, Vol. VI, page 184. [RETURN](#)

16. *vide* above, Note [8](#). Also 'Seeking the Magic Mushroom', Life, May 13, 1957; International Edition, June 10; 'En Busca de los Hongos Magicos'. Life en Espanol, June 3. Also 'I Ate the Sacred Mushroom', by Valentina Wasson, This Week, May 19, 1957. [RETURN](#)

17. *vide* Harvard Botanical Museum Leaflets, Sept. 7, 1962, Vol. 20, Number 2: also second edition, with corrections and addenda March 10, 1963, Number 2a. [RETURN](#)

18. Sahagun: X:24:27. Juan de Cardenas: De los problemas y secretes maravillosos de las Indias, Mexico, 1591, folio 243v. Also **AB**: Chapter 5, and Chapter 7, note 97. [RETURN](#)

19. Also : Chapter 5, Pipiltintzintli. [RETURN](#)

20. Harvard Botanical Museum Leaflets, Dec. 28, 1962. Vol, 20, Number 3. Carl Epling and Carlos D. Jativa-M.: 'A New Species of Salvia from Mexico. [RETURN](#)

21. Valentina Wasson and R. Gordon Wasson: Mushrooms, Russia and History. page 324-6; also Plate LIV. Also Roger Heim and R. Gordon Wasson, Les Champignons Hallucinogènes du Mexique, Chapter III, page 15 bis. [RETURN](#)

22. 'The Psychotropic Active Principles of Ololiuhqui, an Ancient Aztec Narcotic', lecture delivered at the IUPAC Symposium on 'The Chemistry of Natural Products', in Melbourne, August 18, 1960. [RETURN](#)

23. 'A Contribution to our Knowledge of Rivea corymbosa, the narcotic ololiuhqui of the Aztecs', published by Botanical Museum of Harvard University, Cambridge, Mass., 1941. [RETURN](#)

24. Thomas MacDougall: 'Ipomoea tricolor: A Hallucinogenic Plant of the Zapotecs', published in Boletín del Centro de Investigaciones Antropológicas de México, Number 6, March 1, 1960. [RETURN](#)

25. **AB**: Chapter 6, El Complejo del Ololiuhqui, Para 7. The author did not know of the use of Ipomoea seeds when he published his book; in fact, he associated ololiuhqui with the Solanaceae rather than the (sic) Convolvulaceae. He explained the blackness of the seeds as an attribute caused by age. [RETURN](#)

26. For example, V. J. Kinross-Wright: 'Research on Ololiuhqui: The Aztec Drug.' Neuro-Psychopharmacology Vol. 1, Proc. 1st Intern. Congr. of Neuro-Pharmacology Rome, Sept. 1958, pp. 453-56. Also 'Das Mexikanische Rauschgift Ololiuhqui, by Blas Pablo Reko. El México Antiguo, Vol. III, Nos. 3/4, Dec. 1934, pp. 1-7; especially page 6. But for a powerful reaction see Humphry Osmond: 'Ololiuhqui: the Ancient Aztec Narcotic,' published in letter. of Mental Science, Vol. 101, Number 424, July 1955. [RETURN](#)

27. *vide* R. Gordon Wasson: 'The hallucinogenic fungi of Mexico: An inquiry into the origins of the religious idea among primitive peoples.' Harvard Botanical Museum Leaflets, Vol. 19, Number 7, Feb. 1961, pp. 152-3, fn. 1, last sentence.

Chico's visit to the Chatino country served a dual purpose. In *Beyond Telepathy* (Doubleday, N.Y., 1962) Andrija Puharich on page 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 Linguistico de Verano, who speaks Chati. Later he likewise helped Puharich, but he informs us that no brujo 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. Discreetly, 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 forceur, not to be confused with his cousin, Blas Pablo Reko.

Puharich does not identify the spot where he met his (*sic* > bl7lj0.r, 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. [RETURN](#)

28. *vide* Robert Ravicz: 'La Mixteca en el Estudio Comparative del Hongo Alucinante.' *Anales de INAH*, Vol. XIII, 1960 (1961), page 73-92; see page 79, 80, 86. [RETURN](#)

29. **AB**: 'La Familia de los Solanos,' *ftnt.* 45. [RETURN](#)

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 manes. 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 ololiuhqui seeds.

(Stephan F.de Borhegyi: 'Miniature Mushroom Stones from Guatemala', *American Antiquity*, Vol. 26, Number 4, page 498-504, April 1961.) [RETURN](#)

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Note by R. E. Schultes:

Although the spelling ololiuqui has gained wide acceptance and is now the commonest orthography, linguistic evidence indicates that this Nahuatl word is correctly written ololiuhqui.

**There have recently been suggestions that the correct name of ololiuhqui 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. Am. 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 ololiuhqui in 1941 (Schultes, R. E.: A contribution to our knowledge of *Rivea corymbosa*, the narcotic ololiuhqui 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'Donell, 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'Donell 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 ethnobotanical 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.

Rivea corymbosa (L.) Hollier fil. in Engler Bet. Jahrb. 8 (1893) 157.

Convolvulus corymbosus(L.) Linnaeus Syst. Nat. Ed. 10, 2 (1759) 923.

Ipomoea corymbosa (L.) Roth Nov. 11. Sp. Ind. Orient. (1821) 109.

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

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A young Mazatec girl grinding *Salvia divinorum* leaves on a *metate* to express the juice

Ayautla, Sierra Mazateca (1962)

Photo by R. Gordon Wasson. Courtesy Wasson Collection.

The *Salvia divinorum* Research and Information Center

is created and maintained by

Daniel Siebert



Hofman, A - LSD, My Problem child, Chapter 6:

In Search of the Magic Plant "Ska Maria Pastora" in the Mazatec Country

R. Gordon Wasson, with whom I had maintained friendly relations since the investigations of the Mexican magic mushrooms, invited my wife and me to take part in an expedition to Mexico in the fall of 1962. The purpose of the journey was to search for another Mexican magic plant. Wasson had learned on his travels in the mountains of southern Mexico that the expressed juice of the leaves of a plant, which were called hojas de la Pastora or hojas de Maria Pastora, in Mazatec ska Pastora or ska Maria Pastora (leaves of the shepherdess or leaves of Mary the shepherdess), were used among the Mazatec in medico-religious practices, like the teonanacatl mushrooms and the ololiuhqui seeds.

The question now was to ascertain from what sort of plant the "leaves of Mary the shepherdess" derived, and then to identify this plant botanically. We also hoped, if at all possible, to gather sufficient plant material to conduct a chemical investigation on the hallucinogenic principles it contained.

Ride through the Sierra Mazateca

On 26 September 1962, my wife and I accordingly flew to Mexico City, where we met Gordon Wasson. He had made all the necessary preparations for the

expedition, so that in two days we had already set out on the next leg of the journey to the south. Mrs. Irmgard Weitlaner Johnson, (widow of Jean B. Johnson, a pioneer of the ethnographic study of the Mexican magic mushrooms, killed in the Allied landing in North Africa) had joined us. Her father, Robert J. Weitlaner, had emigrated to Mexico from Austria and had likewise contributed toward the rediscovery of the mushroom cult. Mrs. Johnson worked at the National Museum of Anthropology in Mexico City, as an expert on Indian textiles.

After a two-day journey in a spacious Land Rover, which took us over the plateau, along the snow-capped Popocatepetl, passing Puebla, down into the Valley of Orizaba with its magnificent tropical vegetation, then by ferry across the Popoloapan (Butterfly River), on through the former Aztec garrison Tuxtepec, we arrived at the starting point of our expedition, the Mazatec village of Jalapa de Diaz, lying on a hillside.

There we were in the midst of the environment and among the people that we would come to know in the succeeding 2 1/2 weeks.

There was an uproar upon our arrival in the marketplace, center of this village widely dispersed in the jungle. Old and young men, who had been squatting and standing around in the half-opened bars and shops, pressed suspiciously yet curiously about our Land Rover; they were mostly barefoot but all wore a sombrero. Women and girls were nowhere to be seen. One of the men gave us to understand that we should follow him. He led us to the local president, a fat mestizo who had his office in a one-story house with a corrugated iron roof. Gordon showed him our credentials from the civil authorities and from the military governor of Oaxaca, which explained that we had come here to carry out scientific investigations. The president, who probably could not read at all, was visibly impressed by the large-sized documents equipped with official seals. He had lodgings assigned to us in a spacious shed, in which we could place our air mattresses and sleeping bags.

I looked around the region somewhat. The ruins of a large church from colonial

times, which must have once been very beautiful, rose almost ghostlike in the direction of an ascending slope at the side of the village square. Now I could also see women looking out of their huts, venturing to examine the strangers. In their long, white dresses, adorned with red borders, and with their long braids of blue-black hair, they offered a picturesque sight.

We were fed by an old Mazatec woman, who directed a young cook and two helpers. She lived in one of the typical Mazatec huts. These are simply rectangular structures with thatched gabled roofs and walls of wooden poles joined together, windowless, the chinks between the wooden poles offering sufficient opportunity to look out. In the middle of the hut, on the stamped clay floor, was an elevated, open fireplace, built up out of dried clay or made of stones. The smoke escaped through large openings in the walls under the two ends of the roof. Bast mats that lay in a corner or along the walls served as beds. The huts were shared with the domestic animals, as well as black swine, turkeys, and chickens. There was roasted chicken to eat, black beans, and also, in place of bread, tortillas, a type of cornmeal pancake that is baked on the hot stone slab of the hearth. Beer and tequila, an Agave liquor, were served.

Next morning our troop formed for the ride through the Sierra Mazateca. Mules and guides were engaged from the horsekeeper of the village. Guadalupe, the Mazatec familiar with the route, took charge of guiding the lead animal. Gordon, Irmgard, my wife, and I were stationed on our mules in the middle. Teodosio and Pedro, called Chico, two young fellows who trotted along barefoot beside the two mules laden with our baggage, brought up the rear.

It took some time to get accustomed to the hard wooden saddles. Then, however, this mode of locomotion proved to be the most ideal type of travel that I know of. The mules followed the leader, single file, at a steady pace. They required no direction at all by the rider. With surprising dexterity, they sought out the best spots along the almost impassable, partly rocky, partly marshy paths, which led through thickets and streams or onto precipitous slopes. Relieved of all travel cares, we could devote all our attention to the

beauty of the landscape and the tropical vegetation. There were tropical forests with gigantic trees overgrown with twining plants, then again clearings with banana groves or coffee plantations, between light stands of trees, flowers at the edge of the path, over which wondrous butterflies bustled about.... We made our way upstream along the broad riverbed of Rio Santo Domingo, with brooding heat and steamy air, now steeply ascending, then again falling. During a short, violent tropical downpour, the long broad ponchos of oilcloth, with which Gordon had equipped us, proved quite useful. Our Indian guides had protected themselves from the cloudburst with gigantic, heart-shaped leaves that they nimbly chopped off at the edge of the path. Teodosio and Chico gave the impression of great, green hay ricks as they ran, covered with these leaves, beside their mules.

Shortly before nightfall we arrived at the first settlement, La Providencia ranch. The patron, Don Joaquin Garcia, the head of a large family, welcomed us hospitably and full of dignity. It was impossible to determine how many children, in addition to the grown-ups and the domestic animals, were present in the large living room, feebly illuminated by the hearth fire alone.

Gordon and I placed our sleeping bags outdoors under the projecting roof. I awoke in the morning to find a pig grunting over my face.

After another day's journey on the backs of our worthy mules, we arrived at Ayautla, a Mazatec settlement spread across a hillside. En route, among the shrubbery, I had delighted in the blue calyxes of the magic morning glory *Ipomoea violacea*, the mother plant of the ololiuhqui seeds. It grew wild there, whereas among us it is only found in the Garden as an ornamental plant.

We remained in Ayautla for several days. We had lodging in the house of Dona Donata Sosa de Garcia. Dona Donata was in charge of a large family, which included her ailing husband. In addition, she presided over the coffee cultivation of the region. The collection center for the freshly picked coffee beans was in an adjacent building. It was a lovely picture, the young Indian woman and girls returning home from the harvest toward evening, in their

bright garments adorned with colored borders, the coffee sacks carried on their backs by headbands. Dona Donata also managed a type of grocery store, in which her husband, Don Eduardo, stood behind the counter.

In the evening by candlelight, Dona Donata, who besides Mazatec also spoke Spanish, told us about life in the village; one tragedy or another had already struck nearly every one of the seemingly peaceful huts that lay surrounded by this paradisiacal scenery. A man who had murdered his wife, and who now sits in prison for life, had lived in the house next door, which now stood empty. The husband of a daughter of Dona Donata, after an affair with another woman, was murdered out of jealousy. The president of Ayautla, a young bull of a mestizo, to whom we had made our formal visit in the afternoon, never made the short walk from his hut to his "office" in the village hall (with the corrugated iron roof) unless accompanied by two heavily armed men. Because he exacted illegal taxes, he was afraid of being shot to death. Since no higher authority sees to justice in this remote region, people have recourse to self-defense of this type.

Thanks to Dona Donata's good connections, we received the first sample of the sought-after plant, some leaves of *hojas de la Pastora*, from an old woman. Since the flowers and roots were missing, however, this plant material was not suitable for botanical identification. Our efforts to obtain more precise information about the habitat of the plant and its use were also fruitless.

The continuation of our journey from Ayautla was delayed, as we had to wait until our boys could again bring back the mules that they had taken to pasture on the other side of Rio Santo Domingo, over the river swollen by intense downpours.

After a two-day ride, on which we had passed the night in the high mountain village of San Miguel Huautla, we arrived at Rio Santiago. Here we were joined by Dona Herlinda Martinez Cid, a teacher from Huautla de Jimenez. She had ridden over on the invitation of Gordon Wasson, who had known her since his mushroom expeditions, and was to serve as our Mazatec and Spanish-speaking

interpreter. Moreover, she could help us, through her numerous relatives scattered in the region, to pave the way to contacts with curanderos and curanderas who used the hojas de 1a Pastora in their practice. Because of our delayed arrival in Rio Santiago, Dona Herlinda, who was acquainted with the dangers of the region, had been apprehensive about us, fearing we might have plunged down a rocky path or been attacked by robbers.

Our next stop was in San Jose Tenango, a settlement lying deep in a valley, in the midst of tropical vegetation with orange and lemon trees and banana plantations. Here again was the typical village picture: in the center, a marketplace with a half-ruined church from the colonial period, with two or three stands, a general store, and shelters for horses and mules. We found lodging in a corrugated iron barracks, with the special luxury of a cement floor, on which we could spread out our sleeping bags.

In the thick jungle on the mountainside we discovered a spring, whose magnificent fresh water in a natural rocky basin invited us to bathe. That was an unforgettable pleasure after days without opportunities to wash properly. In this grotto I saw a hummingbird for the first time in nature, a blue-green, metallic, iridescent gem, which whirled over great liana blossoms.

The desired contact with persons skilled in medicine came about thanks to the kindred connections of Dona Herlinda, beginning with the curandero Don Sabino. But he refused, for some reason, to receive us in a consultation and to question the leaves. From an old curandera, a venerable woman in a strikingly magnificent Mazatec garment, with the lovely name Natividad Rosa, we received a whole bundle of flowering specimens of the sought-after plant, but even she could not be prevailed upon to perform a ceremony with the leaves for us. Her excuse was that she was too old for the hardship of the magical trip; she could never cover the long distance to certain places: a spring where the wise women gather their powers, a lake on which the sparrows sing, and where objects get their names. Nor would Natividad Rosa tell us where she had gathered the leaves. They grew in a very, very distant forest valley. Wherever she dug up a plant, she put a coffee bean in the earth as thanks to the gods.

We now possessed ample plants with flowers and roots, which were suitable for botanical identification. It was apparently a representative of the genus *Salvia*, a relative of the well-known meadow sage. The plants had blue flowers crowned with a white dome, which are arranged on a panicle 20 to 30 cm long, whose stem leaked blue.

Several days later, Natividad Rosa brought us a whole basket of leaves, for which she was paid fifty pesos. The business seemed to have been discussed, for two other women brought us further quantities of leaves. As it was known that the expressed juice of the leaves is drunk in the ceremony, and this must therefore contain the active principle, the fresh leaves were crushed on a stone plate, squeezed out in a cloth, the juice diluted with alcohol as a preservative, and decanted into flasks in order to be studied later in the laboratory in Basel. I was assisted in this work by an Indian girl, who was accustomed to dealing with the stone plate, the metate, on which the Indians since ancient times have ground their corn by hand.

On the day before the journey was to continue, having given up all hope of being able to attend a ceremony, we suddenly made another contact with a curandera, one who was ready "to serve us." A confidante of Herlinda's, who had produced this contact, led us after nightfall along a secret path to the hut of the curandera, lying solitary on the mountainside above the settlement. No one from the village was to see us or discover that we were received there. It was obviously considered a betrayal of sacred customs, worthy of punishment, to allow strangers, whites, to take part in this. That indeed had also been the real reason why the other healers whom we asked had refused to admit us to a leaf ceremony. Strange birdcalls from the darkness accompanied us on the ascent, and the barking of dogs was heard on all sides. The dogs had detected the strangers. The curandera Consuela Garcia, a woman of some forty years, barefoot like all Indian women in this region, timidly admitted us to her hut and immediately closed up the doorway with a heavy bar. She bid us lie down on the bast mats on the stamped mud floor. As Consuela spoke only Mazatec, Herlinda translated her instructions into Spanish for us. The

curandera lit a candle on a table covered with some images of saints, along with a variety of rubbish. Then she began to bustle about busily, but in silence. All at once we heard peculiar noises and a rummaging in the room-did the hut harbor some hidden person whose shape and proportions could not be made out in the candlelight? Visibly disturbed, Consuela searched the room with the burning candle. It appeared to be merely rats, however, who were working their mischief. In a bowl the curandera now kindled copal, an incense-like resin, which soon filled the whole hut with its aroma. Then the magic potion was ceremoniously prepared. Consuela inquired which of us wished to drink of it with her. Gordon announced himself. Since I was suffering from a severe stomach upset at the time, I could not join in. My wife substituted for me. The curandera laid out six pairs of leaves for herself. She apportioned the same number to Gordon. Anita received three pairs. Like the mushrooms, the leaves are always dosed in pairs, a practice that, of course, has a magical significance. The leaves were crushed with the metate, then squeezed out through a fine sieve into a cup, and the metate and the contents of the sieve were rinsed with water. Finally, the filled cups were incensed over the copal vessel with much ceremony. Consuela asked Anita and Gordon, before she handed them their cups, whether they believed in the truth and the holiness of the ceremony. After they answered in the affirmative and the very bitter-tasting potion was solemnly imbibed, the candles were extinguished and, lying in darkness on the bast masts, we awaited the effects.

After some twenty minutes Anita whispered to me that she saw striking, brightly bordered images. Gordon also perceived the effect of the drug. The voice of the curandera sounded from the darkness, half speaking, half singing. Herlinda translated: Did we believe in Christ's blood and the holiness of the rites? After our "creemos" ("We believe"), the ceremonial performance continued. The curandera lit the candles, moved them from the "altar table" onto the floor, sang and spoke prayers or magic formulas, placed the candles again under the images of the saints-then again silence and darkness. Thereupon the true consultation began. Consuela asked for our request. Gordon inquired after the health of his daughter, who immediately before his departure from New York had to be admitted prematurely to the hospital in

expectation of a baby. He received the comforting information that mother and child were well. Then again came singing and prayer and manipulations with the candles on the "altar table" and on the floor, over the smoking basin.

When the ceremony was at an end, the curandera asked us to rest yet a while longer in prayer on our bast mats. Suddenly a thunderstorm burst out. Through the cracks of the beam walls, lightning flashed into the darkness of the hut, accompanied by violent thunderbolts, while a tropical downpour raged, beating on the roof. Consuela voiced apprehension that we would not be able to leave her house unseen in the darkness. But the thunderstorm let up before daybreak, and we went down the mountainside to our corrugated iron barracks, as noiselessly as possible by the light of flashlights, unnoticed by the villagers, but dogs again barked from all sides.

Participation in this ceremony was the climax of our expedition. It brought confirmation that the hojas de la Pastora were used by the Indians for the same purpose and in the same ceremonial milieu as teonanacatl, the sacred mushrooms. Now we also had authentic plant material, not only sufficient for botanical identification, but also for the planned chemical analysis. The inebriated state that Gordon Wasson and my wife had experienced with the hojas had been shallow and only of short duration, yet it had exhibited a distinctly hallucinogenic character.

On the morning after this eventful night we took leave of San Jose Tenango. The guide, Guadalupe, and the two fellows Teodosio and Pedro appeared before our barracks with the mules at the appointed time. Soon packed up and mounted, our little troop then moved uphill again, through the fertile landscape glittering in the sunlight from the night's thunderstorm. Returning by way of Santiago, toward evening we reached our last stop in Mazatec country, the capital Huautla de Jimenez.

From here on, the return trip to Mexico City was made by automobile. With a final supper in the Posada Rosaura, at the time the only inn in Huautla, we took leave of our Indian guides and of the worthy mules that had carried us so

surefootedly and in such a pleasant way through the Sierra Mazatec. The Indians were paid of, and Teodosio, who also accepted payment for his chief in Jalapa de Diaz (where the animals were to be returned afterward), gave a receipt with his thumbprint colored by a ballpoint pen. We took up quarters in Dona Herlinda's house.

A day later we made our formal visit to the curandera Maria Sabina, a woman made famous by the Wassons' publications. It had been in her hut that Gordon Wasson became the first white man to taste of the sacred mushrooms, in the course of a nocturnal ceremony in the summer of 1955. Gordon and Maria Sabina greeted each other cordially, as old friends. The curandera lived out of the way, on the mountainside above Huautla. The house in which the historic session with Gordon Wasson had taken place had been burned, presumably by angered residents or an envious colleague, because she had divulged the secret of teonanacatl to strangers. In the new hut in which we found ourselves, an incredible disorder prevailed, as had probably also prevailed in the old hut, in which half-naked children, hens, and pigs bustled about. The old curandera had an intelligent face, exceptionally changeable in expression. She was obviously impressed when it was explained that we had managed to confine the spirit of the mushrooms in pills, and she at once declared herself ready to "serve us" with these, that is, to grant us a consultation. It was agreed that this should take place the coming night in the house of Dona Herlinda.

In the course of the day I took a stroll through Huautla de Jimenez, which led along a main street on the mountainside. Then I accompanied Gordon on his visit to the Instituto Nacional Indigenista. This governmental organization had the duty of studying and helping to solve the problems of the indigenous population, that is, the Indians. Its leader told us of the difficulties that the "coffee policy" had caused in the area at that time. The president of Huautla, in collaboration with the Instituto Nacional Indigenista had tried to eliminate middlemen in order to shape the coffee prices favorably for the producing Indians. His body was found, mutilated, the previous June.

Our stroll also took us past the cathedral, from which Gregorian chants

resounded. Old Father Aragon, whom Gordon knew well from his earlier stays, invited us into the vestry for a glass of tequila.

A Mushroom Ceremony

As we returned home to Herlinda's house toward evening, Maria Sabina had already arrived there with a large company, her two lovely daughters, Apolonia and Aurora (two prospective curanderas), and a niece, all of whom brought children along with them. Whenever her child began to cry, Apolonia would offer her breast to it. The old curandero Don Aurelio also appeared, a mighty man, one-eyed, in a black-and-white patterned serape (cloak). Cacao and sweet pastry were served on the veranda. I was reminded of the report from an ancient chronicle which described how chocotatl was drunk before the ingestion of teonanacatl.

After the fall of darkness, we all proceeded into the room in which the ceremony would take place. It was then locked up—that is, the door was obstructed with the only bed available. Only an emergency exit into the back garden remained unlatched for absolute necessity. It was nearly midnight when the ceremony began. Until that time the whole party lay, in darkness sleeping or awaiting the night's events, on the bast mats spread on the floor. Maria Sabina threw a piece of copal on the embers of a brazier from time to time, whereby the stuffy air in the crowded room became somewhat bearable. I had explained to the curandera through Herlinda, who was again with the party as interpreter, that one pill contained the spirit of two pairs of mushrooms. (The pills contained 5.0 mg synthetic psilocybin apiece.)

When all was ready, Maria Sabina apportioned the pills in pairs among the grown-ups present. After solemn smoking, she herself took two pairs (corresponding to 20 mg psilocybin). She gave the same dose to Don Aurelio and her daughter Apolonia, who would also serve as curandera. Aurora received one pair, as did Gordon, while my wife and Irmgard got only one pill each.

One of the children, a girl of about ten, under the guidance of Maria Sabina, had prepared for me the juice of five pairs of fresh leaves of hojas de la Pastora. I wanted to experience this drug that I had been unable to try in San Jose Tenango. The potion was said to be especially active when prepared by an innocent child. The cup with the expressed juice was likewise incensed and conjured by Maria Sabina and Don Aurelio, before it was delivered to me.

All of these preparations and the following ceremony progressed in much the same way as the consultation with the curandera Consuela Garcia in San Jose Tenango.

After the drug was apportioned and the candle on the " altar" was extinguished, we awaited the effects in the darkness.

Before a half hour had elapsed, the curandera murmured something; her daughter and Don Aurelio also became restless. Herlinda translated and explained to us what was wrong. Maria Sabina had said that the pills lacked the spirit of the mushrooms. I discussed the situation with Gordon, who lay beside me. For us it was clear that absorption of the active principle from the pills, which must first dissolve in the stomach, occurs more slowly than from the mushrooms, in which some of the active principle already becomes absorbed through the mucous membranes during chewing. But how could we give a scientific explanation under

such conditions? Rather than try to explain, we decided to act. We distributed more pills. Both curanderas and the curandero each received another pair. They had now each taken a total dosage of 30 mg psilocybin.

After about another quarter of an hour, the spirit of the pills did begin to yield its effects, which lasted until the crack of dawn. The daughters, and Don Aurelio with his deep bass voice, fervently answered the prayers and singing of the curandera. Blissful, yearning moans of Apolonia and Aurora, between singing and prayer, gave the impression that the religious experience of the young women in the drug inebriation was combined with sensual-sexual

feelings.

In the middle of the ceremony Maria Sabina asked for our request. Gordon inquired again after the health of his daughter and grandchild. He received the same good information as from the curandera Consuela. Mother and child were in fact well when he returned home to New York. Obviously, however, this still represents no proof of the prophetic abilities of both curanderas.

Evidently as an effect of the hojas, I found myself for some time in a state of mental sensitivity and intense experience, which, however, was not accompanied by hallucinations. Anita, Irmgard, and Gordon experienced a euphoric condition of inebriation that was influenced by the strange, mystical atmosphere. My wife was impressed by the vision of very distinct strange line patterns.

She was astonished and perplexed, later, on discovering precisely the same images in the rich ornamentation over the altar in an old church near Puebla. That was on the return trip to Mexico City, when we visited churches from colonial times. These admirable churches offer great cultural and historical interest because the Indian artists and workmen who assisted in their construction smuggled in elements of Indian style. Klaus Thomas, in his book *Die kunstlich gesteuerte Seele* [The artificially steered mind] (Ferdinand Enke Verlag, Stuttgart, 1970), writes about the possible influence of visions from psilocybin inebriation on Meso-American Indian art: "Surely a culturalhistorical comparison of the old and new creations of Indian art . . . must convince the unbiased spectator of the harmony with the images, forms and colors of a psilocybin inebriation." The Mexican character of the visions seen in my first experience with dried *Psilocybe mexicana* mushrooms and the drawing of Li Gelpke after a psilocybin inebriation could also point to such an association.

As we took leave of Maria Sabina and her clan at the crack of dawn, the curandera said that the pills had the same power as the mushrooms, that there

was no difference. This was a confirmation from the most competent authority, that the synthetic psilocybin is identical with the natural product. As a parting gift I let Maria Sabina have a vial of psilocybin pills. She radiantly explained to our interpreter Herlinda that she could now give consultations even in the season when no mushrooms grow.

How should we judge the conduct of Maria Sabina, the fact that she allowed strangers, white people, access to the secret ceremony, and let them try the sacred mushroom?

To her credit it can be said that she had thereby opened the door to the exploration of the Mexican mushroom cult in its present form, and to the scientific, botanical, and chemical investigation of the sacred mushrooms. Valuable active substances, psilocybin and psilocin, resulted. Without this assistance, the ancient knowledge and experience that was concealed in these secret practices would possibly, even probably, have disappeared without a trace, without having borne fruit, in the advancement of Western civilization.

From another standpoint, the conduct of this curandera can be regarded as a profanation of a sacred custom-even as a betrayal. Some of her countrymen were of this opinion, which was expressed in acts of revenge, including the burning of her house.

The profanation of the mushroom cult did not stop with the scientific investigations. The publication about the magic mushrooms unleashed an invasion of hippies and drug seekers into the Mazatec country, many of whom behaved badly, some even criminally. Another undesirable consequence was the beginning of true tourism in Huautla de Jimenez, whereby the originality of the place was eradicated.

Such statements and considerations are, for the most part, the concern of ethnographical research. Wherever researchers and scientists trace and elucidate the remains of ancient customs that are becoming rarer, their primitiveness is lost. This loss is only more or less counterbalanced when the

outcome of the research represents a lasting cultural gain.

From Huautla de Jimenez we proceeded first to Teotitlan, in a breakneck truck ride along a half-paved road, and from there went on a comfortable car trip back to Mexico City, the starting point of our expedition. I had lost several kilograms in body weight, but was overwhelmingly compensated in enchanting experiences.

The herbarium samples of hojas de la Pastora, which we had brought with us, were subjected to botanical identification by Carl Epling and Carlos D. Jativa at the Botanical Institute of Harvard University in Cambridge, Massachusetts. They found that this plant was a hitherto undescribed species of *Salvia*, which was named *Salvia divinorum* by these authors. The chemical investigation of the juice of the magic sage in the laboratory in Basel was unsuccessful. The psychoactive principle of this drug seems to be a rather unstable substance, since the juice prepared in Mexico and preserved with alcohol proved in selfexperiments to be no longer active. Where the chemical nature of the active principle is concerned, the problem of the magic plant *ska Maria Pastora* still awaits solution.

So far in this book I have mainly described my scientific work and matters relating to my professional activity. But this work, by its very nature, had repercussions on my own life and personality, not least because it brought me into contact with interesting and important contemporaries. I have already mentioned some of them-Timothy Leary, Rudolf Gelpke, Gordon Wasson. Now, in the pages that follow, I would like to emerge from the natural scientist's reserve, in order to portray encounters which were personally meaningful to me and which helped me solve questions posed by the substances I had discovered.

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Albert Hofmann

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- Hofmann's book "LSD, My Problem Child" is available at [this site](#)
 - A chapter from Hofmann and [Schultes](#)' book *Plants of the Gods* entitled [The Nectar of Delight](#).
 - ["The Discovery of LSD"](#) by Albert Hofmann, with an introduction by [Alexander Shulgin](#).

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the Lycaeum

Salvinorin, A New *trans*-Neoclerodane Diterpene from *Salvia divinorum* (Labiatae)

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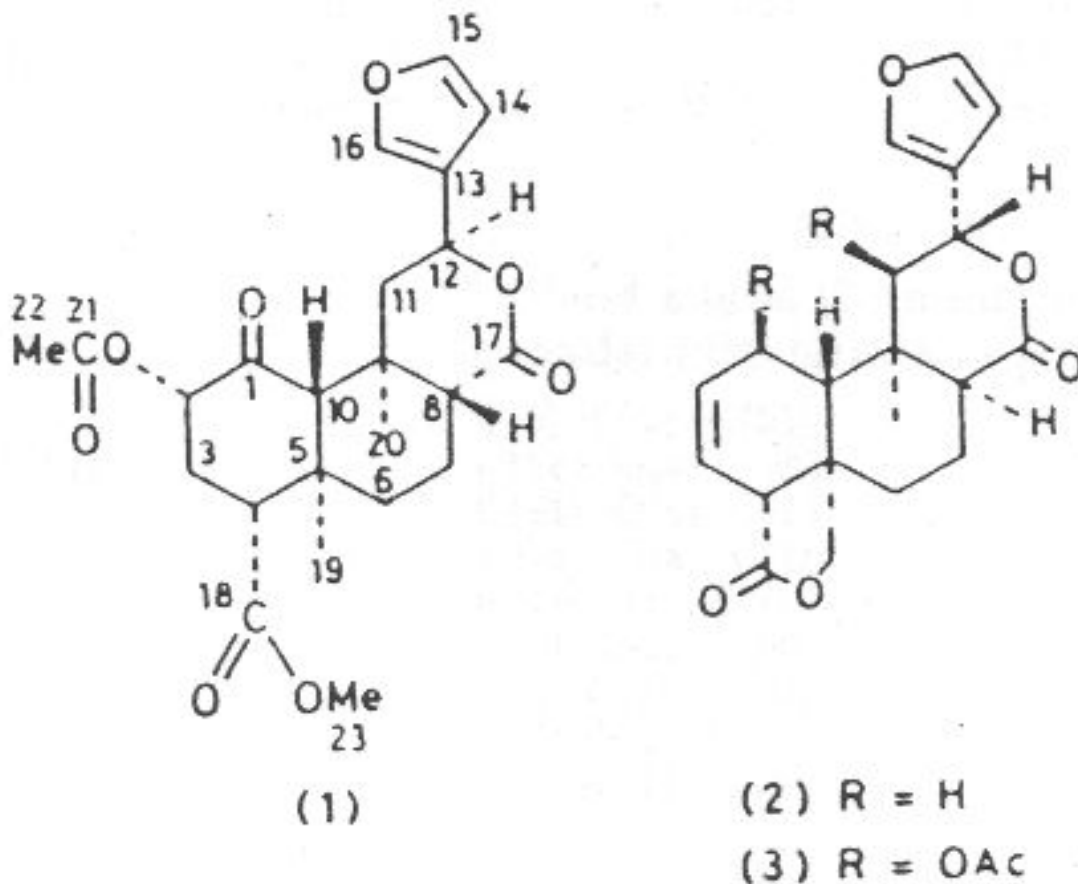
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Salvinorin, isolated from *Salvia divinorum* has been shown by spectroscopic and X-ray-crystallographic methods to be a *trans*-neoclerodane diterpene of structure (**1**). Crystals of compound (**1**) are orthorhombic, space group $P2_1P2_1P2_1$ with $a = 6.368$ (2), $b = 11.338$ (3), $c = 30.7100$ (6) Å, and $Z = 4$. The structure was refined by least-squares to R 0.052 and R' 0.056.

The essential oils produced by certain members of the widespread genus *Salvia* (Labiatae) are used extensively in the food and cosmetic industries. Examples are Dalmatian sage oil from *S. officinalis* (used to flavour certain foods) and Clary sage oil from *S. Sclarea* (used in perfumery).¹ *S. divinorum* ('hojas de la Pastora', possibly identical with "pipiltzintzintli") is a relatively rare plant that is used by the Mazatec Indians of Mexico in their divination rites,² but no previous chemical studies have been reported for it. However, various bi- and tri-cyclic diterpenes have been isolated from other *Salvia* species.³ Extraction of the leaves of *S. divinorum* has now yielded a novel bicyclic diterpene, salvinorin (**1**), $C_{23}H_{28}O_8$, whose structural elucidation forms the subject of this paper.



Although the i.r. spectrum (CHCl_3) of salvinorin (**1**) showed only one peak in the carbonyl region (ν_{max} 1735 cm^{-1}), the ^{13}C n.m.r. spectrum (CDCl_3 ; $\delta/\text{p.p.m.}$) revealed carbons due to four carbonyl groups; one of the ketone type (singlet at 202.4) and three of the ester type (singlets at 171.57, 171.15, and 169.94). Other salient features in the ^{13}C n.m.r. spectrum of compound (**1**) included absorptions due to a β -substituted furan (singlet at 125.25 and doublets at 143.66, 139.46, and 108.41), four methyl carbons (quartets at 51.90, 20.56, 16.36 and 15.19), and two methine carbons bearing oxygen (doublets at 75.03 and 72.00, these are assigned to C-2 and C-12, respectively). There were also absorptions due to three methine carbons α to carbonyl groups (doublets at 63.90, 53.47, and 51.26), four unassigned methylene carbons (triplets at 43.23, 38.08, 30.75 and 18.11), and two quaternary carbons (singlets at 42.06 and 35.41). the ^1H n.m.r. spectrum (CDCl_3) had absorptions due to two tertiary methyl groups (singlets at δ_{H} 1.11 and 1.45), a methyl ester (singlet at 3.74) and the β -substituted furan (1 H-multiplet at 6.38 and 2 H-multiplet at 7.41). Absorption due to the acetate appeared at δ_{H} 2.16, that the acetate was a secondary one was evident from the presence of a one proton triplet (δ_{H} 5.14, J 10 Hz). A one proton doublet of doublets (δ_{H} 5.51 J 12 and 6 Hz) is assigned to the 12-H.

Final proof of the stereoscopic structure of salvinorin (**1**) was obtained from a single-crystal X-ray analysis using direct methods.⁴ Details of the X-ray analysis are given in the Experimental section, and listings of final atomic parameters, bond lengths, and torsion angles are given in tables 1-4. An ORTEP

stereoscopic drawing of compound (**1**), as determined from the X-ray analysis is displayed in the Figure. This figure also represents the absolute stereochemistry of salvinorin, which was deduced from the negative c.d. curve (294 nm, ϵ - 5 600 in dioxan) due to the keto group at C-1, in accord with that reported for isofructicolone.⁵

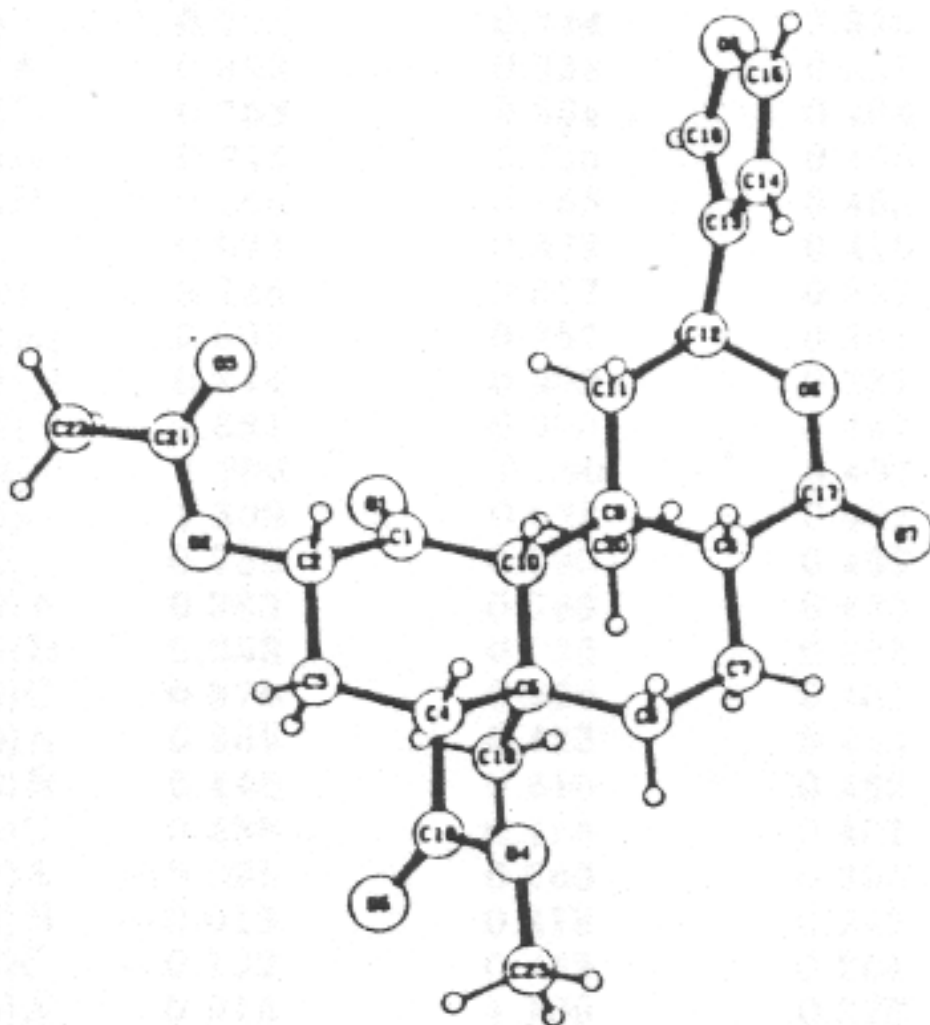


FIGURE. An ORTEP stereoscopic drawing of Salvinorin (**1**)
[Arachnid note - not reproduced as stereo drawing].

Salvinorin (**1**) thus belongs to the neoclerodane class of diterpenes, a group of compounds that has attracted considerable interest because of problems associated with their stereochemistry⁶ and because of the diverse biological activities shown by some members (*e.g.* insect antifeedant, antitumor and antifungal properties).⁷ Except for differences in the substituents and the stereochemistry at C-8 and C-12, salvinorin (**1**) is structurally similar to salviarin (**2**)³ and splendidin (**3**),⁸ compounds which were recently isolated from *S. splendens* by Hanson and his collaborators.

EXPERIMENTAL

The m.p. was determined in a capillary tube. I.r. and n.m.r. spectra were determined in chloroform and deuteriochloroform, respectively. The ¹H and ¹³C n.m.r. were determined at 200 and 50.8 MHz,

respectively. The ^1H and ^{13}C n.m.r. spectra were determined at 200 and 50.8 MHz, respectively. Chemical shifts are expressed in p.p.m. downfield from tetramethylsilane as internal reference, with coupling constants (J) in Hz. The mass spectrum was recorded at 70 eV, m/z values are given with relative intensities (%) in parentheses. Thin-layer chromatography (t.l.c.) was performed on silica (PF₂₅₄g Merck) plates and spots were made visible by spraying with 10% phosphomolybdic acid in propan-2-ol followed by heating. Column chromatography was carried out using 'Tonsil' as adsorbent. 'Tonsil' is a commercially available bentonitic earth with the following composition: SiO₂ (72.5%), Al₂O₃ (13%), Fe₂O₃ (5%), MgO (1.5%), CaO (7.2%), and H₂O (8.5%), and has pH 3.

Isolation of Salvinorin (1) - Dried milled leaves (200 g) of *Salvia divinorum*, collected at Huautla, Oaxaca (Mexico) in November 1980, were extracted with boiling chloroform. Evaporation of the solvent gave a green residue (27 g) which was purified by chromatography on 'Tonsil' (200 g) with chloroform as eluant. Thirteen fractions of 50.0 mL were collected, the sixth and seventh of which contained compound (1) as ascertained by t.l.c. (45% ethyl acetate in hexane as developer, R_f 0.7). Crystallization from methanol yielded salvinorin (1) as colourless crystals, m.p. 238-240°C; $[\alpha]_{\text{D}}^{25}$ -41° (c, 1 in CHCl₃); ν_{max} 1735 cm⁻¹; δ_{H} 1.11 (3H, s, Me), 1.45 (3H, s, Me), 2.16 (3H, s, COMe), 3.74 (3H, s, CO₂Me), 5.14 (1H, t, J 10, 2-H), 5.51 (1H, dd, J 12 and 6, 12-H), 6.38 (1H, m, 14-H), 7.14 (2H, m, 15- and 16-H); δ_{C} 15.19 (q, C-19), 16.36 (q, C-20), 18.11 (t, CH₂), 20.56 (q, C-22), 30.75 (t, CH₂), 35.41 (s, C-9), 38.08 (t, C-11), 42.06 (s, C-5), 43.23 (t, CH₂), 51.26 (d, C-8), 51.90 (q, c-23), 53.47 (d, c-4), 63.90 (d, C-10), 72 (d, C-12), 75.03 (d, C-2), 108.41 (d, C-14), 125.25 (s, C-13), 139.46 (d, C-16), 143.66 (d, C-15), 169.94 (s, C-21), 171.15 (s, C-15), 171.57 (s, C-17), and 202.04 (s, C-1) (assignments are tentative and based on chemical shifts and off-resonance decoupled spectra); m/z 432 (M⁺, 20), 404 (15), 359 (5), 318 (20), 273 (30), and 94 (100) (Found: C, 63.5; H, 6.3; C₂₃H₂₈O₈ requires C, 63.88; H, 6.53%).

X-Ray Crystallographic analysis of Salvinorin (1) - C₂₃H₂₈O₈. $M = 432.47$. Orthorhombic, space group $P2_12_12_1$. $a = 6.368(2)$, $b = 11.338(3)$, $c = 30.710(6)$ Å. $Z = 4$, $D_c = 1.295$ g cm⁻³, $\mu(\text{Cu-K}_2) = 8.3$ cm⁻¹. The intensity data, uncorrected for absorption, were measured on a fully automated Hilger-Watts diffractometer (Ni-filtered Cu-K₂ radiation, θ -2 θ scans; pulse-height discrimination) using a crystal of dimensions ca. 0.08 x 0.20 x 0.6 mm grown from methanol. Of 1763 independent reflections for $\theta < 57^\circ$, 1518 were considered to be observed [$I > 2.5\sigma(I)$]. The structure and relative stereochemistry of compound (1) were solved by a multiple-solution procedure⁴ and refined by full matrix least squares. In the final refinement the non-hydrogen atoms were refined anisotropically, except for the oxygen atom of a molecule of water, which was refined isotropically. The occupancy factor of the oxygen molecule of the water molecule was included in the refinement and was found to be 0.32(1). The hydrogen atoms were included in the structure-factor calculations, but their parameters were not refined. The final discrepancy indices were R 0.052, R' 0.056 for the 1518 observed reflections. The final difference map had no peaks greater than 0.2 e Å⁻³. Listings of final atomic parameters, bond lengths, bond angles and torsion angles are given in Tables 1-4. Observed and calculated structure factors and atomic thermal parameters are given in Supplementary Publication No. SUP 23371 (8 pp).

[Arachnid note - Tables 1 - 4. X-ray crystallographic and ordering data - not reproduced.]

Table 1 - Final atomic parameters for salvinorin (**1**)...

Table 2 - Bond lengths (Å) in salvinorin (**1**)...

Table 3 - Bond angles (°) in salvinorin (**1**)...

Table 4 - Torsion angles (°) in salvinorin (**1**)...

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Ethnopharmacology of *Ska María Pastora* (*Salvia divinorum*, Epling and Játiva-M.)

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Summary

Salvia divinorum is a perennial labiate used for curing and divination by the Mazatec Indians of Oaxaca, Mexico. The psychotropic effects the plant produces are compared to those of the other hallucinogens employed by the Mazatecs, the morning glory, *Rivea corymbosa* L., Hallier F. and the psilocybin-containing mushrooms. A discussion of the role of *ska María Pastora* in the "native pharmacopoeia" is based on previous reports and fieldwork by the authors with a Mazatec shaman.

Introduction

Salvia divinorum (Epling and Játiva-M.) is a perennial herb in the Labiatae (mint family) native to certain areas in the Sierra Mazateca of Oaxaca, Mexico (Fig. 1). It is one of about 500 species of *Salvia* in the New World subgenus *Calosphace* (Epling and Játiva-M., 1962). The plant grows in large clones to well over 1 m in height and its large green leaves, hollow square stems and white flowers with purple calyces are characteristic taxonomic features. This sage has been found only in forest ravines and other moist humid areas of the Sierra Mazateca between 750 m and 1500 m altitude (Díaz, 1975a). Carl Epling, who first described *S. divinorum*, reported the flower as having a blue corolla, and it has been illustrated this way in the literature (Epling and Játiva-M., 1962; Schultes, 1976). However, this description has been shown to be an error, as all living specimens of the plant have had blossoms with white corollas and purple calyces (Díaz, 1975a; Emboden, 1979).

S. divinorum is one of several vision-inducing plants employed by the Mazatec Indians, one of the native peoples living in the mountains and upland valleys of northeastern Oaxaca. Unlike other Mexican tribes, there is little information concerning their existence before the arrival of the conquering Spanish, who reduced the Mazatecan population through exploitation and disease (Weitlaner and Hoppe, 1964). The 1970 census estimated their number at 92,540 (Córtes, 1979) and the language, of the Mazatec-Popoloca family, is one of the many non-Spanish dialects spoken throughout Mexico (Weitlaner and Hoppe, 1964). The Mazatecan ritual use of hallucinogens, such as mushroom containing psilocybin and morning glory seeds containing lysergic acid amide, has been widely publicized through the investigations of R. Gordon Wasson and Albert Hofmann, among others (Wasson and Wasson, 1957; Wasson, 1963; Hoffman, 1964; Hoffman, 1980).

Review of literature

Although the use of the mushrooms and morning glories was documented by the Spanish *conquistadores*

and chroniclers who arrived in Mexico during the Sixteenth Century (Wasson, 1963), the literature on *S. divinorum* is relatively recent. Wasson originally proposed that this *Salvia* was the plant known to the Spanish by the Nahuatl (Aztec) name of *pipiltzintzintli*, but new investigations suggest that the Mexican name probably refers to *Cannabis sativa* L. (Díaz, 1979).

There are a number of common names for *S. divinorum* and nearly all are related to the plant's association with the Virgin Mary. It is known to the Mazatecs as *ska María* or *ska Pastora* and the sage is also known by a number of Spanish names including *hojas de María*, *hojas de la Pastora*, *hierba (yerba) María* or *la María*. The Mazatecs believe this *Salvia* to be an incarnation of the Virgin Mary, and care is taken to avoid trampling on or damaging it when picking the leaves, which are used both for curing and in divination (Fig. 2).

Attempts at the identification of *ska María Pastora* were carried out in conjunction with anthropological expeditions led by one of Mexico's leading anthropologists, the former Austrian engineer, Roberto G. Weitlaner, who rediscovered native use of hallucinogenic mushrooms among the Mazatecs in 1936 (Wasson, 1963). On a field trip in 1938, Weitlaner's future son-in-law, the American anthropologist, Jean B. Johnson learned that the Mazatecs employed a "tea" made from the beaten leaves of a "hierba Maria" for divination. The preparation was used in a manner similar to the "narcotic" mushrooms and the *semillas de la Virgen*, which were later identified as morning glory seeds (Johnson, 1939). Blas P. Reko, who knew Weitlaner well, referred to a "magic plant" employed by the Cuicatec and Mazatec Indians to produce visions. It was known as the *hoja de adivinación* (leaf of prophecy) and although Reko could not identify the plant, it was probably *S. divinorum* (Reko, 1945).

In 1952 Weitlaner reported the use of a *yerba (hierba) de María* by the Mazatecs in Jalapa de Díaz, a small Oaxacan village. According to his informant the leaves of this plant were gathered by *curanderos* (shamans or healers), who went up into the mountains and harvested them after a session of kneeling and prayer. For use in "curing" the foliage was rubbed between the hands and an infusion of from 50 to 100 leaves was prepared, the higher dose being used for alcohol "addicts". Around midnight the *curandero*, the patient and another person went to a dark quiet place (perhaps a house) where the patient ingested the potion. After about 15 min the effects became noticeable. The subject would go into a semi-delirious trance and from his speech the *curandero* made a diagnosis and then ended the session by bathing the patient in a portion of the infusion that had been set aside. The bath supposedly ended the intoxicated state. In addition to such "curing", the *yerba María* also served for divination of robbery or loss (Weitlaner, 1952).

Five years later the Mexican botanist, A. Gómez Pompa, collected specimens of a *Salvia* known as "xka (sic) Pastora". He noted that the plant was used as an hallucinogen (*alucinante*) and a dose was prepared from 8 to 12 pairs of leaves. Since flowering material was not available, the sage could not be identified past the generic level (Gómez Pompa, 1957). The holotype specimen of *S. divinorum* was acquired by Wasson and Hofmann in 1962 while they were traveling with Weitlaner. Flowering plants were brought to them in the village of San José Tenango, as they were not permitted to visit the locality in which *ska María Pastora* grew. This collection was sent to Epling and Játiva-M. who described it as a new species of *Salvia*, *S. divinorum* (Wasson, 1962; Epling and Játiva-M., 1962).

Wasson was the first to personally describe the effects of *ska Pastora*, relating the experiences he and member of his party had on ingestion of different doses of a beverage prepared from the plant's foliage. At a session in July 1961 in which he participated, a *curandera* (female shamans are very common among the Mazatecs and other Mexican peoples) squeezed the juice of 34 pairs of leaves by hand into a glass and added water. Wasson drank the dark fluid and wrote that although the effects came on much faster than those of the mushrooms, they lasted a much shorter time. He saw only "dancing colors in elaborate, three-dimensional designs" (Wasson, 1962). Summing up the experience, he later stated (pers. comm):

A number of us (including me) had tried the infusion of the leaves and we thought we experienced something, though much weaker than the *Psilocybe* species of mushroom.

Hofmann and his wife, Anita, who accompanied Wasson on an expedition the following year, took an infusion prepared from five and three pairs of *S. divinorum* leaves, respectively. Mrs. Hofmann "saw striking, brightly bordered images" while Hofmann found himself "in a state of mental sensitivity and intense experience, which, however, was not accompanied by hallucinations" (Hofmann, 1980).

María Sabina, the Mazatec shaman made famous by Wasson, and who lives in the Mazatec highland town of Huautla, in Oaxaca, briefly mentioned her use of the plant in her autobiography (Estrada, 1977):

If I have a sick person during the season when the mushrooms are not available, I resort to the *hojas de la Pastora*. Crushed (*molido*) and taken, they work like the "children" (i.e., the mushrooms). Of course, the *Pastora* doesn't have as much strength.

Roquet and Ganc reported that the Mazatecs prepared a dose of *S. divinorum* from 120 pairs of crushed leaves and used the plant only when the mushrooms and morning-glory seeds were not available. Roquet and his associates used the plant twice in their psychiatric investigations of Mexican hallucinogenic plants and stated that they had difficulties in working with it (Roquet, 1972).

José Luis Díaz and his coworkers studied the use of *ska María Pastora* in the Mazatec highlands during the 1970's. Díaz himself took the *Salvia* infusion under the supervision of a shaman, Doña J., on six different occasions, noting an increased awareness of the plant's effects each time. The first changes he perceived were a series of complex and slowly changing visual patterns that occurred only in complete quiet with closed eyes. There were no colored geometric patterns which characteristically occur with ingestion of other hallucinogens nor were there auditory images. After a short time he noticed peripheral phenomena, such as a feeling of lightness in the extremities and odd sensations in the joints. The climax of effects, accompanied by dizziness or nausea (*mareo*), lasted about 10 min and disappeared about 0.5 h after ingestion of the infusion. Other, more subtle, effects seemed to persist for a few hours (Díaz, 1975a).

Hofmann (Hofmann, 1964) and Díaz (Díaz, 1975a) each investigated *S. divinorum* chemically without isolating and identifying any active principle. As noted above, the descriptions in the literature emphasize the mildness of the plant's effects. There are many ways to achieve visions other than by ingestion of

classically defined "hallucinogens" such as mescaline, LSD and psilocybin. Among these are meditation, prayer, mental illness, disease (especially when accompanied by fever), poisoning, experiences of dying, and suggestion (placebo effect). Therefore, prior to conduction chemical and animal studies, we decided to attempt to clarify the role of *S. divinorum* as a vision inducer among the Mazatec Indians.

Mazatec healing

The following report is based on fieldwork with a Mazatec *curandero*, or healer, living near the Alemán Reservoir in the Mexican state of Oaxaca, about 100 km from the port of Veracruz. Although a study based on information from a single source is open to criticism, the jealous and secretive nature of native shamans works against statistical methods of survey. Visiting many shamans in a single area can actually lessen the amount of information gathered, as each *curandero* may fear the visitor is telling their secrets and giving their "power" to a rival. To them magic can hurt or kill. Wasson and Richard E. Schultes have both commented on the difficulty of making contacts with the *curanderos* of this region (Wasson and Wasson, 1957; Schultes, 1941).

Don Alejandro, the informant, spoke only a Mazatecan dialect. One of his sons served as an interpreter, translating from the native tongue to Spanish. The information they provided the authors was gathered in fragments over many visits during the summer of 1979 and spring of 1980.

Mazatec healing and religion are united in a manner common to traditional cultures. This is somewhat foreign to western scientific medicine which is isolated from religion except for the times when it no longer serves to cure. A brief description of Mazatec healing, based mainly on the work with Don Alejandro should help to explain the use of *ska María Pastora* and its relationships to other healing plants. The Mazatecs (the name, taken from the city of Mazatlan was actually imposed on the natives by the Spanish) are nominally Catholic Christians, but they have incorporated many features of their traditional beliefs into their conceptions of God and the Saints, whom they consider to have been the first healers. The most prominent among them is San Pedro, or Saint Peter, who is said to have cured a sick and crying infant Jesus through the ritual use of tobacco (*Nicotiana* spp.). Tobacco is considered to be a health problem in the United States and many other countries, and its acute pharmacological effects are due to the alkaloid nicotine (Larsen et al, 1961). Yet for the Mazatecs, as well as for almost all Mesoamerican Indians, it is the most important curing tool in the "pharmacopeia". The fresh tobacco leaf is dried, ground and mixed with lime to form a powder known to the Mazatecs as San Pedro (Saint Peter); the "best" is prepared on the Saint's day, June 29th (Incháustegui, 1977). The preparation is more familiarly known by its Nahuatl name *picietl* (*piciete*). It is worn in charms and amulets as a protection against various "diseases" and witchcraft, but its most important use is in *limpias*, or ritual cleansings. It may be used alone with a prayer and *copal* (an incense prepared from the resin of *Bursera* spp.) (Díaz, 1975b), or in conjunction with such herbs as basil (*Ocimum* spp.) or marijuana (*Cannabis sativa*)*, eggs, or various other substances. Anyone who comes to Don Alejandro to be treated usually gets a *limpia*. This ritual cleansing may be the cure itself, or it may be accompanied by other "medicines". The patient is given a pinch of the San Pedro powder (wrapped in paper) to carry with them and use during the healing period.

*Don Alejandro does not use marijuana, as it is illegal.

One learns to become a shaman through an informal apprenticeship, although the Mazatecs will insist they are taught by a progression of visions from and of heaven, rather than by people. Psychotropic plants are intimately associated with this training, which can last up to two years or longer. In this area of Oaxaca, as well as the highland region visited by Díaz, the vision inducers are taken systematically at intervals of a week to a month. Once one becomes a healer the hallucinogenic plants are ingested much less frequently. The process begins by taking successively increasing doses of *S. divinorum* for a number of times to become acquainted with the "way to heaven". Next comes mastery of the morning glory (*Rivea corymbosa* (L.), Hallier, f.) seeds and finally one learns to use the sacred mushrooms. There is a rigid *dieta*, or diet, to follow during this time. "Hot" foods such as garlic and chili peppers are restricted and there must be abstinence from sex and alcohol for extended periods. However, many Mazatec shamans incorporate alcohol into their training and drink during their ceremonies (Wasson and Wasson, 1957). Breaking from this *dieta*, or ritual diet, could make one crazy according to Don Alejandro and since such obligations require maturity, one should be at least 30 years old before becoming a *curandero*.

A comparison of Mazatec hallucinogen

Ska María Pastora is, pharmacologically, the weakest of the three hallucinogenic plants. Following its ingestion the Virgin Mary is supposed to speak to the individual, but only in absolute quiet and darkness. The relatively mild experience is readily terminated by noise (such as a loud voice) or light. Don Alejandro says the effects of *tu-nu-sho*, the flower seeds (*R. corymbosa*), are similar to the of the *María* (*S. divinorum*) as both plants are siblings (*son hermanos*) under the protection of the Virgin Mary and San Pedro. A "dose" he provided weighed 9.6 g and consisted of about 350 *R. corymbosa* seeds. A brief report on another morning glory (*Ipomoea purpurea* Roth) noted that ingestion of a large number of seeds produced effects similar to LSD, but with an additional narcotic component characterized by drowsiness and torpor (Savage et al., 1972). Humphrey Osmond also noted a narcotic effect on dosing himself with *R. corymbosa* seeds (Hoffer and Osmond, 1967). The activity of morning glories appears to be due to d-lysergic acid amide (ergine) and related alkaloids (Schultes and Hofmann, 1980). Interestingly, the authors discovered a woodrose (*Argyreia* spp.) growing in the vicinity of the village where Don Alejandro lived. *Argyreia* spp. contain LSD-like compounds (Chao and der Marderosian, 1973). When asked whether he used the plant, Don Alejandro said that he did not, since it caused people to become crazy. The *curandero* also had several horticultural specimens of *Coleus* spp. growing near his house. Wasson has noted that the Mazatecs believe *Coleus* to be a medicinal or hallucinogenic herb related to *S. divinorum* (Wasson, 1962). However, Don Alejandro said the plants were not medicinal and his daughter had bought them at the market because they were pretty.

According to Don Alejandro *ni-to*, or the mushrooms-that-one-takes (*hongos para tomar*, probably not a literal translation, see Wasson, 1980) are unlike the other two plants. The fungi are *delicado* (delicate), *nervioso* (nervous), *una cosa de envidia* (a thing of envy). Unfortunately the English translations of these terms do not convey the Indian-Spanish concept of magic that has a dangerous and sinister side. Santa Ana and San Venanzio, the Saints the *curandero* associates with the mushrooms, were not as good at healing as San Pedro and the *Virgén María*, the patrons of the *Salvia* and the morning glory. Eating too many of the fungi can "leave one crazy" and the visions are often *trucos* (tricky). Other Mazatec informants have attributed such characteristics to the visions, saying that one has to separate the true

form the false (Incháustegui, 1977). Wasson has reported that misuse of the mushroom can lead to madness (Wasson and Wasson, 1957). Munn and Wasson have given complementary descriptions of shamanic use of mushrooms among the Mazatecs (Munn, 1979; Wasson, 1980). Psilocybin and psilocin, the vision-inducing compounds in the fungi, were isolated by Hofmann, who used himself as a subject for their activity. He reported that a dose of 2.4 g of dried *Psilocybe mexicana* Heim (an average amount for a *curandero*) produced effects he could not control or resist. A colleague "was transformed" into an Aztec priest and at the height of the experience Hofmann felt he "would be torn into this whirlpool of form and color and would dissolve" (Hofmann, 1980). This experience was quite unlike the mild one produced by *S. divinorum*. As Don Alejandro stated it, "The María, on the other hand accepts you (*la María, en cambio, te acepta*)."

Remedial uses of *S. divinorum*

From the shaman the investigators learned that the plant could be used as a "medicine" as well as for the induction of visions. A low dose serves as what the investigators interpreted to be a "tonic " or "panacea" as well as for "magical" healing (Don Alejandro did not use such terms). An infusion prepared from 4 or 5 pairs of fresh or dry leaves may be taken by the glass (*vaso*) or tablespoonful (*cucharada*) as needed. It is used to cure the following "illnesses", although there may be other possible uses:

1. It helps one defecate and urinate. It stops diarrhea (the plant apparently is believed to regulate eliminatory functions).
2. It is given to the sick, old or dying to revive them or alleviate their illness. People who are pale, white and almost ready to die (they have "anemia") may recuperate on taking *la María*.
3. It may be taken to relieve headaches and rheumatism (however, when taken in the high doses that induce visions, it often leaves one with a headache the following morning, according to the *curandero*).
4. There is a semi-magical disease known as *panzon de barrego* (sic), or a swollen belly, which is supposedly caused by a curse from a *brujo*, or evil sorcerer. The victim's midsection swell up due to a "stone" that has been put inside them. Taking the *Salvia* causes elimination of this "stone" and the belly shrinks down to size. The researchers met an old shaman who showed them his wrinkled middle and said he had cured himself of the "disease" by the use of "*la María*". Don Alejandro confirmed the "illness" and the "cure".

Divination with *S. divinorum*

S. divinorum may be prepared as an infusion from 20 (about 50 g) to 80 (about 200 g) or more pairs of fresh leaves to induce visions and may be taken by the *curandero*, the patient (or apprentice) or both, depending on the situation. Only fresh foliage will serve for divination. At this dosage level, the *Salvia* is used to foretell the future, find the causes and cures of illnesses and obtain answers to questions about friends, enemies and relatives. In shamanic training, the future healer takes *la María* to learn the ways of healing and the identification and use of medicinal plants (there is supposedly a tree in Heaven with all such herbs in it and one talks to God and the Saints about them under the influence of the hallucinogens). After preliminary sessions in the company of the master, who takes the infusion along with the

apprentice to watch him on the journey, the future healer may continue to study on his own until it is time for the next plant in the series. Don Alejandro told the investigators that the *Salvia*, the morning glory seeds and the mushroom each told their own *historia* (story or history) and *ska María* was the best teacher of the ways of curing, as one learned the most from it. During the course of the visits, the researchers were able to participate in two sessions under the shaman's guidance. As the hallucinogens are never taken without a valid purpose and since the researchers were from "the University", the ceremonies were oriented to teach them about healing and especially the uses of the *María* and other medicinal plants. Don Alejandro said they would have to follow the *dieta*, or ritual diet for 16 days, although they could bathe and drink beer (after the first time, the *dieta* for *S. divinorum* is only 4 days in length).

The preparations for the two ceremonies were essentially the same. As Dark came (about 19:30 to 20:00 h) the *curandero* began making the *Salvia* infusion. The leaves were first counted out in pairs to arrive at each person's dose and put neatly into piles with their petioles aligned. Then Don Alejandro picked up part of a pile and crushed it by hand into a small bowl partially filled with water (Fig. 3). As more foliage was squeezed and added, the liquid turned dark green from the chlorophylls. After the potion was prepared, it was poured through a sieve into a glass which was topped off with water (Fig. 4). During the preparations for the second session a head of foam formed on the glasses and the *curandero* laughed. He explained through his son that the foam (*espuma*) was an indication of strength and the *María* would be very potent that evening. The glasses were covered with inverted cups to "prevent the escape of the humor (*que no salga el humor*)". Although the foliage of *S. divinorum* could reportedly be kept fresh for a week or longer when wrapped in the large leaves of *Xanthosoma robustum* Schoff, the prepared infusion was said to be stable for a day. The spent leaves were set aside to be discarded in an out of the way location where they wouldn't be defiled by people or animals. However, Don Alejandro said they could still be used by putting them on a subject's head to refresh them after the session. The *curandero* picked up a glass of the *María* and began an oration. The Holy Trinity, Saint Peter, the Virgin Mary and other Saints were called on to watch over the participants and teach the visitors the ways of curing:

In nomine Spiritu Santo (this "Latin" phrase was always translated into the vernacular as:
In the name of the Father, the Son and the Holy Ghost) Most
Holy Lord Saint Peter
In the name of Leandros (the subject)

In nomine Spiritu Santo
María, show Leandros,
that he may see what there is in the world
For he wishes to study all the classes of medicines
Lord Jesus Christ, show him
May he learn
May he see all the classes of medicinal plants
You, who know all, show him
I want you to show him all the different kinds

of illnesses and remedies that exist in the world
 In a short time he must learn your story

In nomine Spiritu Santo
 Most Holy sainted Rosary
 Set him free, that he may see it
 Show him as you have shown me
 May he recognize all that is the Universe
 All that is your History
 He wishes to learn out of love and sincerity
 I want you to show him, as I am asking your favor
 You, *María* and Lord Jesus Christ, amen
 If there is bad or good, save him
 Help him out of sincerity or love

In nomine Spiritu Santo
 Most Holy Lord Saint Peter
 You, too, *María*, show him
 Set him free that he may see it
 Do not be deceptive
 This day, on this very date
 he is going to take it (the *Salvia* infusion)

In nomine Spiritu Santo
 Most Holy Lord Saint Peter
 Help this Leandros
 May he grow more
 May he learn things
 Show him all that there is in the world
 All that is good
 All that is medicinal

In nomine Spiritu Santo
 Most Holy Lord Saint Peter
 Lord Saint Anthony, Lord Saint Peter, Jesus Christ
 You are the only three who know about *la María*
 You must show him all that is medicinal
 All that is the Universe
 All that is your History
 Show him, do not be bad

In nomine Spiritu Santo
 Holy Sanctuary, Lord Santa Ana
 You who are good, You must help him

so that he becomes acquainted with our Universe
 You must teach him what I ask
 so that it will be to the Lord Saint Peter's pleasure
 Let Leandros take it (*la María*)
In nomine Spiritu Santo
 Most Holy Lord Saint Peter

Two to four hours passed in conversation and telling of stories. The shaman repeatedly emphasized that it was important to describe one's visions, "If you are going to learn or if you are going to understand what it is all about, you must speak." Finally it was time for ingestion of the infusions (between 21:00 and 23:00 h). Following Mazatec custom, at least one person didn't participate, in order to watch over the rest (Wasson et al., 1974). As a last protection against any dangers during the visionary "travels", Don Alejandro performed *limpias*, or ritual cleansings on the visitors (Fig. 5),

In nomine Spiritu Santo
 Most Holy Lord Saint Peter
 This is a *limpia* for Leandros (subject)
 Arise, listen, as it is now the time

In nomine Spiritu Santo
 Most Holy Lord Saint Peter
 I ask Your favor for Leandros
 Heal him, care for him
 For I am going to cleanse him now
 Help him at this moment that he may be cleansed
 Strike out the bad illnesses that he may have
 Lord (Saint Peter) attend him
 That he may see the Universe
 What there is in the world
 Everything
 Help him, raise him
 May he see what there is
 All that he wishes to know
 Save him, care for him

In nomine Spiritu Santo
 Most Holy Lord Saint Peter
 Reclaim this man
 That he live well, live better
 For this man is known by all the children of God
 Heal him, as you will
 Heed his messages the moment you heal him

Take care of him, help him
That is what I am saying

In nomine Spiritu Santo

Most Holy Lord Saint Peter

Lord Jesus Christ

You know how to save him, how to cleanse him

Cure him, no matter what badness has fallen on him

Heal him, care for him

I want You to heal him and save him from all bad things

Being in my hands, I can help him,

having faith and will.

In nomine Spiritu Santo

Most Holy Lord Saint Peter

Sainted trinity, care for him

Help him, let no evil befall him

As the oration was being recited, Don Alejandro anointed the subject with a piece of *copal* dipped in the San Pedro. The *Curandero* then gave him a pinch of the San Pedro to carry for protection if he felt danger during or after the session. After a final benediction (Fig. 6), the potions were drunk and the light was turned out.

Session 1, August 18, 1979

The participants were Díaz, Valdés and Don Alejandro, who sat on a bench and watched over the others during the proceedings. The *curandero* and Díaz, who had taken *la María* several times previously, each had doses prepared from 50 pairs of leaves. Valdés received a beginner's dose prepared from 20 pairs. They took the *Salvia* preparations around 22:30 h. The visitors shared a large cot while the shaman lay on a *petate*, or sleeping mat which was unrolled on the floor.

Díaz sat quietly on the side of the cot after the lights went out. About 15 min after ingestion of the infusion he began to see subtle visions, constricted like columns of smoke in the total darkness. It made no difference whether his eyes were opened or closed. Deciding to speak out, he saw a light which disappeared as he began to describe it. The images increased in intensity. He saw a large mountain made of ice, as though he were at the base of a cliff formed from large ice columns. The vision slowly changed into Cerro Rabón, a nearby mountain intimately associated with Mazatec legends (Incháustegui, 1977). About 2300:h the flow of images changed into lights of various shades of blue, indigo and purples, scattered as if in a spatial vacuum. Depending on his perspective, he was either traveling through them or else they were being projected toward him. He saw a cross being encircled by a light and a mantle. As he described the imagery in words, it seemed to be fixed more clearly in his memory and he felt it would aid in later recall of the experience.

Some 45 min after the lights went out, Don Alejandro began to speak in a monotone. His son did not

interrupt to translate from the Mazatec. As the shaman spoke, Valdés (who had only experienced a few brief visions which he hadn't described) saw a black sky with brightly-colored objects floating in it. He suddenly found himself speeding toward one and actually felt he was accelerating through space past the rest. The light turned out to be a Mazatec village similar to that of the *curandero*. Valdés saw it from above, as if he were on a hill. Shapes, like kaleidoscopic pillars of smoke, were at the sides of some of the houses. Then he was suddenly in space, receding away from the vision.

Don Alejandro stopped speaking, turned on the light and went out to look for a "spy" he had heard outside the house. He found nothing, but forced himself to vomit, which he said would end his visions. The session had lasted about 1 h, and the following hour was spent in discussion of what had been seen. The *curandero* told the two visitors that he had watched over them during the session and ascertained what they needed to know. The old man said that after a few more experiences Díaz would learn to heal and use the medicinal plants. He mentioned a woman, a doctor like Díaz, who would try to interfere with or get involved in his work. Don Alejandro emphasized to Valdés, who had remained quiet throughout the night, that it was necessary to speak out about the visions and he would need many sessions before he would learn how to heal. Everyone then went to sleep and rose early the next morning.

Session 2, March 6, 1980

During this much less formal session Díaz and Valdés took the infusion of *S. divinorum* and were monitored by Don Alejandro and his son, as well as by Paul, who tape recorded events throughout the afternoon and evening. The researchers arrived at the village around 17:00 h and the shaman spent the entire afternoon and early evening talking with them about his visions of "Heaven" and the office (*escritorio*) he had there, near God and Jesus. He recounted many tales and legends, including one about the origins of healing. It was a very enjoyable afternoon which provided an excellent set and setting (Weil, 1972) for the visitors' experience with *la María*.

Díaz and Valdés received infusions prepared from 60 and 50 pairs of fresh *S. divinorum* leaves, respectively. They drank the prepared potions at 21:00 h and lay down in Don Alejandro's bedroom while the *curandero*'s son and Paul sat on a bed next to them. Don Alejandro remained in the other room. The two researchers spoke in turn and were questioned by the younger Mazatecan whenever there was a lull in their speech:

Paul - Nine o'clock, Leander and José Luis are drinking (the *Salvia* infusion)...

----- (indicates a pause in the recording)

Díaz - *Nueve doce* (he looked at his lighted watch). *Empiezo a sentir algunos de los, de los efectos de la planta. Me siento muy relajado. Y he tenido en los últimos momentos muchas imágenes de plantas y flores. Mucha, muchos tipos de flores diferentes... algunos de ellos desconocidos para mí... De muchos colores. Siento mi cuerpo muy suave, como ligero. En los últimos momentos empezaba a se... a ver algunas imágenes como puntos de luz.* (Nine-twelve. I am beginning to feel some of the, the effects of the plant. I feel very relaxed. And I have had, in the past minutes, many images of plants and flowers. Many, many different kinds of flowers... some of them unknown to me... Of many colors. My body feels very mellow, as if it were light. In the past moments I began to see some images like points of light.) That's all for now.

Valdés - ...plants and flowers. I think they were what people call eidetic images, 'cause I saw them when I first closed my eyes. They've disappeared. I feel like I'm being twisted around inside of my body. Very, very strange sensations, like I'm being... twisted. Boy, like I'm spinning.

Díaz - *Nueve veinte. Las... la sensación de ligereza del cuerpo es más intensa. En un momento dado sentí como... como que sea (¿quisiera?) atravesar a un techo y las imágenes de plantas han cambiado y ahora he tenido sensaciones como estar flotando en la noche llena de estrellas y me doy cuenta que no es... no es fácil (dog barks) tener... de que no es fácil tener la fe que se (dog), que se nos pide. Que se me pide. Me siento muy... muy, como muy emocionado. Todas estas cosas (dog). Es todo por ahora. (Nine-twenty. The... the sensation of lightness of the body is more intense. In a given moment I feel as though... as though I were floating through a roof and the images of plants have changed and now I have had sensations like floating in the night full of stars and I realize that it isn't... it isn't easy to have... that it isn't easy to have the, the faith that he... that he asks of us. That he asks of me. I feel very... very, like very moved. All these things. That's all for now.)*

Son - ¿José Luis?

Díaz - ¿Sí? (Yes?)

Son - ¿Ya no ve más imágenes(sic)? (Do you see any more images?)

Díaz - *Sí, un poco. Tengo algunas más, pero no ha sido muy... muy intenso, ¿no? He visto... como si estuviera flotando en el cielo, como si hubiera entrado a... a... pues, como a una gran nave o algo así. Y... y como si fuera las cosas muy mecánicas adentro como una máquina... muy precisa e (sic) muy geométrica. Y en... y curiosamente, como si en algunos casos hubiera otra vez flores dentro de este lugar. Y volví otra vez a ver como muchas flores, pero como si fueran mecánicas, como si no fueran de... de verdad. (Yes, a little. I have seen more, but it has not been very intense, no? I have seen... as though I were floating in the sky, as though I had entered a large boat, or something like that. And.. and as if all the things inside were very mechanical like a machine that was very... very precise and geometric. And in... and curiously, as if in some cases there were again flowers inside the place. And again I began to see like many flowers, but as if they were all mechanical, as if they were not... real.)*

Son - Cristo? ¿No lo viste? (Christ? Didn't you see him?)

Díaz - *Pues... no. A veces me acordé de él, pero no, no sé presentó en una imagen, ¿no? A veces también pensé en unas imágenes de las que nos dijo..., nos dijo Don Alejandro. De los escritorios y... Pero, pero nada más. (Well... no. At times I thought about him, but he didn't appear as an image, no? At times I thought about some of the images which... which Don Alejandro described to us. Of the offices and... But, but nothing else.)*

Son - No te enseñaron completo. (They didn't show you everything.)

Valdés - ...down. It's very hard for me to talk. Like something's pushing me down into the bed. My arms are very, very sore. (Dog barks) I see things, but there's no, no (lost to dog barking). They just

overwhelm me. Very hard to describe. I see things that look like fruits. Very strange, I can see the seeds. I can see the (dog barks) oranges and yellows and colors. Strange. Like giant fruit.

Son - *¿Qué dice Leandros? ¿Qué fué lo que vi (sic)?* (What is Leandros saying? What did he see?)

Díaz - *Dice que le cuesta... le cuesta más trabajo hablar. Que siente su cuerpo muy pesado* (dog barks throughout this section of the recording). (He says that it is hard... it is hard for him to talk. That his body feels very heavy.)

Son - *Mm-hmm.*

Díaz - *Que los imágenes no son.. son sutiles, ¿no? No son muy... no son muy intensas, ¿no?* (dog continues). *A veces logra... logra a ver algunos colores. Describe algunas flores, y como frutos.* (That the images are not... they are weak, no? they aren't very... they aren't very intense, no? At times he succeeds... he succeeds in seeing some colors. He describes some flowers, and like fruit.)

Son - *Sí.*

Díaz - *Pero no hay... no hay imágenes así que son muy... muy...* (But there aren't... there aren't images that are very... very...)

Valdés - *Hay muchas de semillas, ¿no? Esas... de melones, ¿no?* (There are many of seeds, no? Those of melons, no?)

Son - *Sí.*

Díaz - *¿Se sie... te sientes muy contento, no?* (You fee... You feel very content, no?)

Valdés - *Muy pesado (sic).* (Very heavy.)

Son - *¿No viste algo más?* (Didn't you see anything else?)

Valdés - *Cosas, pero no puedo describerlas (sic; sounded somewhat intoxicated at this time.)* (Things, but I can't describe them.)

Valdés - *... parece que está quemando, ¿no? Que tiene dos rayas* (cross with two arms) *en vez de una, ¿no?* (...it seems to be burning, no? That it has two rays instead of one, no?)

Son - *Mm-hmm.*

Valdés - *Pa'ece (parece) este tiene fuego.* (This thing seems to have fire.)

Son - *Mm-hmm.*

Valdés - *Que hay como un cuerpo envuelto* (dog barked throughout). (That there is like a wrapped body.)

Son - *Mm-hmm.*

Valdés - ... *de cruz* (dogs barked throughout). *Ya, ya había muchas cosas pero ya están des'pareciendo. Todo está como un* (lost to dogs) *muy negrosa.* (...of a cross. Now, now there were many things but now they are disappearing. Everything is like a very black...)

Son - *Sí*

Valdés - *Parece como una pintura, pero todo en blanco y negro.* (It looks like a picture, but everything in black and white.)

Son - *Mm-hmm.*

Díaz - *Ví... ví que con la flor de la... de la... de la semilla de la Virgen. Bastante claramente con su color morado. I... Ipomoea violacea, ¿no? Yo tengo muchos, muchas imágenes si... si me fijo en ellas, ¿no? Se mueven bastante, ¿no?* (I saw, I saw something like the flower of the... the flower of the... of the seed of the Virgin. Quite clearly with its purplish color. I... *Ipomoea violacea*, no? I see many, many images if... if I concentrate on them, no? They move a lot, no?)

Son - *Sí.*

Díaz - *Pero la... el estado de estar muy contento ya hace rato ya se me quitó.* (However, the... the state of feeling content left me a while ago.)

Son - *Mm-hmm.*

(the dogs quieted down for a while)

Son - *¿Ya puede explicar mi 'apa?* (Can my father explain now?)

Díaz - *Sí. Fíjate, tenía... Creo que es... es importante también que le digas que... que no se siente mal porque, porque nosotros no... no... vemos lo que él vió...* (Yes. Look, I had... I think it is... it is also important that you tell him that... that he shouldn't feel bad because, because we... didn't... didn't see what he saw...)

Son - *Mm-hmm.*

Díaz - ...*examente, porque nosotros venimos de... de una forma de... del ver el mundo... muy distinta, ¿no?* (...exactly, because we come from... from a very different manner of... of looking at things, no?)

Son - *Mm-hmm.*

Díaz - *Entonces por eso es que tenemos más dificultades para... para ponernos en... en contacto con Cristo.* (Then, because of this we have more difficulties in order to... in order to put ourselves in... in contact with Christ.)

Son - *Con Cristo* (With Christ.)

Díaz - *Y con lo Sagrado, ¿no?* (And with sacred things, no?)

Son- *Mm-hmm.*

Díaz - *Nos... nos pasan otras cosas, ¿no? O s'an (¿sean?) que no vea él qu'eso es como una falla, ¿no? De Uds. o de la planta ni mucho menos, ¿no?* (To us... to us other things happen, no? He shouldn't see this as a failure, no? Yours or even less, of the plant, no?)

Son - *Mm-hmm.*

Díaz - *Sino que nuest'a experiencia es muy distinta porque..., pues, vemos las cosas de otra forma, ¿no?* (Only it's that our experience is very different because... well, we see things differently, no?)

Son - *Sí.*

Díaz - *Es importante para él que... para Uds. que se den cuenta de eso, ¿no?* (It is important for him that... for you both that you understand this, no?)

Son - *Mm-hmm.*

Díaz *Yo me siento muy contento, ¿no? Por... por la experiencia así como está, ¿no?* (I feel very content, no? For... for the experience just as it is, no?)

Son -*Sí.*

Díaz - *Pues, nada más eso.* (Well, that's all.)

Son - *Ah-ah. ¿Tu, Leandros, ve más imagen? ¿O ya con ese es lo mucho que viste?* (You, Leandros, do you see more images? Or is that all you have seen?)

Valdés - *Veo imagenes y parecen un poco pero... como los imagenes de la iglesia pero no tienen caras, ¿no?* (I see images and they look a little but.. like the images of the church but they don't have faces, no?)

Son - *Mm-hmm.*

Valdés - *Tienen.. se, se ve este, los vestidos, ¿no? De, de oro y todo pero no hay imagen. No hay de caras, ¿no? Que se reconoce los...(They have... one sees this, their clothing, ¿no? Of, of gold and everything, but there is no image. There aren't any faces, no? That one recognizes the...)*

Son - *Mm-hmm.*

Valdés - *Tienen los manos así como... como tienen...(lost; figures were praying).(they have their hands like this.. like the...)*

Son - *¿Ese es todo lo que viste?* (Is that all you saw?)

Valdés - *Estoy viéndololo ahorita, ¿no? Ya... ya estoy viéndolo.* (I am looking at it know, no? I still.. still am looking at it.)

Díaz - *Yo sigo también viendo, si me fijo, sigo teniendo imágenes.* (I continue to see, if I pay attention, I continue seeing images.)

Son - *Mm-hmm.*

Díaz - *Como flores otra vez, muy luminosas, ¿no? Como si tuvieron una luz interior.* (Like flowers again, very luminous, no? As if they had an interior light.)

Son - *Sí.*

Díaz - *Creo que tiene mucho que ver con el... con el cielo que nos... que nos explicaste hace rato, ¿no? De cómo es el cielo* (I think it has a lot to do with the... with the Heaven that... that you described to us a while ago, ?no? Of how Heaven is.)

Son - *Mm-hmm.*

Díaz - *Lleno de música. Lleno de flores, ¿no?* (Full of music, full of flowers, no?)

Valdés - *Ve algo ent'e... entre cruz y espada que es my dorado, muy... tiene muchas joyas?* (I see something between... between a cross and a sword which is all covered with gold, very... it has many jewels.)

Son - *Mm-hmm... ¿Sigue la imagen, todas, o ya se está allí?* (Do all the images continue, or is it still there?)

Valdés - *Si, sí, sí... sigue, sigue. Pero cambia, ¿no? Sigue y cambia, ¿no?* (Yes, yes, yes... it continues, it continues. But it changes, no? It continues and it changes, no?)

Son - *Sí.*

Valdés - *Ya es... ya es seguro que sea una, una espada... ya se des'pareció* (Now it is... now it is surely a sword... Now it has disappeared.)

Díaz - *Ya tenía como una luz... como una luz. Estas, estas flores que decía que tenían como una... como muy iluminados en el centro. Se ha convertido ahora como en una luz.. fuerte, ¿no?* (Now I saw like a light... like a light. Therés flowers that I said had like a... like very illuminated in the middle. Now it has changed into a light... strong, no?)

Son - *Mm-hmm.*

Díaz - *Que viene como de arriba.* (Which comes as if though from above.)

Valdés - (lost to truck noise)... *es... es forma entre cruz pero tiene todo adentro. Tiene de todo... luces y animales... de... de gente, de plantas. Todo. (lost)... de muchos colores, como una pintura. Colores muy, muy vivos. De animales.* (It is... it is a shape between a cross but it has everything inside. It has everything... lights and animals... of... of people, of plants. Everything of many colors, like a picture. Very, very vivid colors. Of animals.)

Valdés - ...to collect this... this image of a cross I could seem to be able to, when I really concentrate on it, pull it back out. It disappears and recedes into things around it, and if I'd lose it in... in all the things that are happening. But if I work at it I can concentrate and bring it back. *Es que puedo... Yo, yo pierdo el imagen de la cruz. Pero si pienso en esta cosa, este que me vuelve otra vez, ¿no?* (It's that I can... I, I lose the image of the cross. But if I think about this thing, it comes back to me again, no?)

Son - *Sí.*

Valdés - *Me vuelve otra vez y puedo fijar en esto y concentrar en esto. Pero es bastante difícil. Pero que... se puede... mantener esta cosa.* (It returns to me again and I can pay attention to it and concentrate on it. But it is fairly difficult. But that... one can... maintain this thing.) I that's something about this state that you learn to work around in. Pull images out as you need them.

Díaz - ...images of... like flying from a certain... *De al... de volar como en una cierta altura. Y ten (sic) como los campos sembrados de... y llenos de plantas. Sembrados de todas las planta que producen... producen granos que se usa para comer. Campos muy bien trabaja'os* (lost to noise). (Of... of flying as though at a certain altitude. And there are fields planted with... and full of plants. Planted with all the plants that produce... produce grain that is used for food. Fields that are very well cared for.)

Valdés - ...*que parece entre un castillo, o como un... una iglesia Bizantina. Estoy bastante lejos de esta cosa. No está a su lado, ¿no? No está cual (sic) debe estar. Parece un poco, ¿cómo se dice? "tilted on its side"? Estoy muy lejos y como de estoy muy arriba de esta cosa* (dog starts again) *Ya parece más como castillo. Lo veo desde del... desde muy lejos como está de allá. Como esta debajo de mí. Pero no veo nada de ge... de gente. No hay nadie. Hay banderas. De todas colores.* (...which seems to be between a castle, or like a... a Byzantine church. I'm quite far from this thing. Not at its side, no? It isn't as it should be. It seems to be a little, how does one say, "tilted on its side"? I am very far away and as though I'm very high above this thing. Now it looks more like a castle. I see it from the... from very far away as though it is from there. As though it is below me. But I don't see anybody of peo... of people. There isn't anybody. There are banners. Of all colors.)

Díaz - *es interesante. Cuando mencionaste castillo yo también empecé a ver.* (That's interesting. When you mentioned a castle I also began to see one.)

Son - *Un castillo.* (A castle.)

Valdés - *ya... ya lo veo. Veo como sombras, formas, pero no tienen... No veo caras en estas cosas, ¿no?*

Son como... ¿como se dice, "just covered by robes"? Hacen... y marchan pero son muy, muy serios estas cosas. (Still... I see it. I see like shadows, shapes, but they don't have... I don't see faces on these things, no? They are like... how does one say "covered by robes"? They make... and march but these things are very serious.)

Son - *¿Es todo lo que ves?* (Is that all you see?)

Valdés - *Todavía estoy mirándolo, ¿no? Es nuevo para mí, esto. Esta cosa.* (I'm still looking at it, no? This thing is new to me. This thing.)

Fifty minutes had elapsed. The *curandero's* son cut the session short, saying that the village noises, especially the dogs, were too loud for worthwhile experiences. As Díaz and Valdés left the bedroom they staggered and stumbled. Although they said their minds felt clear, the tape recording showed their speech to be slurred and their sentence patterns to be awkward and broken. Díaz commented, "it is as the body is intoxicated (*borracho*) and the mind isn't." Don Alejandro spent the next hour discussing their visions in detail with them, saying that with more experience what they saw would become clearer and more meaningful. He told the visitors that Paul should drive when they left, as the effects of *la María* would last the entire night.

As the car traveled through the late Oaxacan darkness, Valdés saw more icon-like images. Among them was the Virgin of Guadalupe amidst red, white and green streaming banners. Whenever the image began to fade, he found that he could recall it at will. Arriving at their destination the three researchers ate a light meal. Díaz wrapped himself in a *sarape(poncho)*, for he had a chill. He remarked that this had happened to him on previous occasions when he had taken the *Salvia* infusion. His heart rate, when measured by Paul, had slowed from its normal 60 beats per minute to about 50. Earlier at the shaman's house, Paul had shone his flashlight into the subject's eyes and both had a normal pupillary response. Valdés felt "heavy" and "sore", especially in the shoulders and upper arms. After a shower, all went to bed.

When the lights went out (about 23:30 h or 2.5 h after ingestion of *la María*), Valdés began to have more visions. He saw a purplish light that changed into a bee or mothlike shape which became a pulsating sea-anemone. The imagery expanded into desert landscape full of moving prickly pear (*Opuntia* spp.) shapes. During the first session the previous summer and throughout the evening Valdés felt the visions appear to be like looking at a cross between a moving cartoon and a silent motion picture. Suddenly, however, he found himself standing in a bizarre, colored landscape talking to a man who was either shaking or holding on to his hand. Next to them was something that resembled the skeleton of a giant stick-model airplane made from rainbow-colored inner tubing. The "reality" of what he was seeing amazed him. After a brief instant, the desert scene reappeared and Valdés then slowly drifted off to sleep. The three researchers rose early the next morning and all were in good spirits.

Discussion and conclusions: ethnopharmacology of *S. divinorum*

Remedial uses

It is beyond the scope of this paper to comment on the efficacy of *S. divinorum* in treatment of the

various "folk ailments". There is not enough information available to make a scientific decision. More fieldwork at this time would be more practical and certainly more useful than trying to screen for anti-inflammatory, cathartic, analgesic, diuretic, tonic and magical properties in the laboratory. However, it should be noted that many *Salvia* species are used medicinally throughout the world, and the genus name itself comes from the Latin *salvare*, to save. The Middle English name for sage was *save* or *saue*, from the Latin *Salvia* via Old English *Saluie*) (Oxford English Dictionary, 1971), and Chaucer mentions it as a cure for wounds and broken limbs in "The Knight's Tale" (Chaucer, 1927). Common sage, *S. officinalis*, and Clary sage, *S. sclarea*, have had a long history of use in treatment of numerous maladies (Grieve, 1971). *S. miltiorrhiza*, or *tan-shen*, is one of the five astral remedies in Chinese medicine, as is *jen-shen* or ginseng (*Panax* spp.). This sage is credited with many tonic properties in the *Pen T'sao*, published in 1578 (Smith and Stuart, 1973), and is listed in "A Barefoot Doctor's Manual" (Anon., 1974). Siri Altschul has collected information on a number of medicinal *Salvia* from specimens at the Harvard Herbaria (Altschul, 1973) and Díaz lists nine species as being used medicinally in Mexico (Díaz, 1976).

Use in Divination

During the two sessions with *S. divinorum*, the investigators noted the following:

1. Various sensations were reported by the subjects while lying or sitting down in quiet darkness. These included flying or floating and traveling through "space," twisting and spinning, heaviness and lightness of the body and "soreness."
2. Physical effects also accompanied the experience. There was an intoxication that produced dizziness and a lack of coordination on trying to move about. The recording of the second session revealed slurred speech and awkward sentence patterns. Díaz had a decrease in heart rate accompanied by a chill. Both subjects had a normal pupillary response to a light shined into their eyes.
3. Even though the subjects were aware of the sensations and the physical incoordination produced by the *Salvia* infusion, they claimed their minds seemed to be in a state of acute awareness. The experience was not like intoxication from alcoholic beverages.
4. Previous reports of *S. divinorum* ingestion emphasized the mildness of the effects, and the shortness of their duration. It has been shown, however, that under the appropriate conditions of quiet and darkness it was possible to experience effects which lasted for hours. The visions produced were readily terminated by light or noise.
5. There is apparently an aspect of the *Salvia* intoxication that leaves the subject's mind in a receptive state. This was well documented in the second session when both subjects spoke out fairly continuously. Díaz began by describing plants and flowers. After he finished speaking Valdés began with a similar vision. When Díaz lamented his inability to see the religious figures as described by the *curandero*, he apparently triggered off Valdés, who saw such imagery for the rest of the session and during the ride in the car. As Valdés described a castle, Díaz began to see one also.

Don Alejandro's son translated the shaman's explanation of how *S. divinorum* worked in humans,

What happens to the *i-nyi-ma-no* (the soul, the heart, or life, all three concepts are

contained in a single Mazatec word) when one drinks the *María* is that the *María* has so much liquor (*licor*) that one is left as in a faint. For this reason a person becomes intoxicated (*borracho*) when they have been entered by the *María*, the oration my father prays and the words of Christ, also. But it really isn't liquor, I tell you, you go into a "delicate" state (*delicado vayas*). Do not worry, do not be afraid of what is happening to the *i-nyi-ma-no*; something does happen, but it is small and unimportant. At times one who takes the *María* becomes half-drunk, but with the result that what they are taking will be engraved on their mind.

Among Mazatec healers who use the three divinatory plants (the mushrooms, the morning glory seeds and the *Salvia*), *S. divinorum* is the first to be employed in shamanic training. Leary and Alpert have been credited with being the first to discover the importance of what they called set ("a person's expectation of what a drug will do to him") and setting ("the environment, both physical and social, in which a drug is taken") to an individual's experiences under the influences of an hallucinogen (Weil, 1972). In traditional cultures, like that of the Mazatecs, the purpose of plants like *ska María Pastora* is to induce visions, and shamans, such as Don Alejandro, are masters at the manipulation of set and setting to such ends. Although reportedly only weakly psychotropic, the *Salvia* infusion will induce powerful visions under the appropriate conditions. Two ritual orations, which heighten the mystery of what is to follow, are performed on the subject or apprentice, who then takes la *María* with the *curandero* himself. As the shaman reveals his visions in the silent darkness, the subject (whose mind has been into a receptive state by the *María* and the ceremonial settings) is able to "see" it also. By having a sober person monitor the session any difficulties that arise will be observed, and if the experience becomes too terrifying, it can readily be terminated by a few words or producing a light. Mastering *S. divinorum* and learning to use the morning glory seeds before employing the mushrooms probably makes an apprenticeship much less traumatic than it would be by use of the fungi alone, in addition to giving the future shaman wider insights into the varieties of hallucinogenic experiences.

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ETNOFARMACOLOGIA di Ska Maria Pastora (Salvia divinorum - Epling & Jatìva-M)

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Sommario

La *Salvia divinorum* è una pianta perenne della famiglia delle Labiate, usata per le guarigioni e nelle profezie degli Indiani Mazatec (Mazatechi) d'Oaxaca, Mexico. Gli effetti psicotropi della pianta sono comparabili a quelli degli altri allucinogeni usati dai Mazatechi: la Morning glory (***Rivea corymbosa*** - *L. Haller F.*) e i funghi contenenti psilocibina. Una discussione sul ruolo di ska María Pastora nella farmacopea nativa si basa sui precedenti rapporti documentati e sul lavoro effettuato sul campo dagli Autori con uno Sciamano Mazatec.

Introduzione:

La *Salvia divinorum* è una pianta perenne, famiglia Labiate (come la menta), originaria di certe aree della Sierra Mazateca d'Oaxaca, Mexico (fig.1). E' una tra le circa 500 specie di *Salvia* nel subgenere *Calosphaceae*, del Nuovo Mondo (Epling et Jatìva-M.. 1962). La pianta cresce in grandi **cloni** ben oltre un metro d'altezza e le sue ampie foglie verdi, gli steli squadrati e cavi ed i fiori bianchi con calici color porpora sono le sue caratteristiche componenti tassonomiche.

Questa salvia è stata ritrovata esclusivamente nei burroni dentro le foreste e in altre zone umide della Sierra Mazateca, tra i 750 ed i 1500 metri d'altitudine (Diaz, 1975°). Carl Epling, che descrisse per primo la *Salvia divinorum*, riferì che il fiore portava una corolla blu, perciò fu illustrato in tal modo nella letteratura scientifica (Epling et Jativa-M., 1962; Schultes, 1976). Ad ogni modo, questa descrizione si è dimostrata errata, dato che tutti gli esemplari viventi della pianta hanno portato infiorescenze con corolla bianca e calice porpora (Diaz, 1975°; Emboden, 1979).

S. divinorum è una delle diverse piante che provocano visioni impiegate dagli Indiani Mazatechi, uno dei popoli nativi viventi sulle montagne e nelle alte valli dell'Oaxaca nord-orientale. Diversamente dalle altre tribù Messicane, si hanno poche notizie sulla loro esistenza prima dell'arrivo dei conquistadores Spagnoli, che assottigliarono la popolazione Mazateca con lo sfruttamento e le malattie. (Weitlaner & Hoppe, 1964). Il censimento del 1970 stimò il loro numero in 92.540 (Cortés, 1979), e il linguaggio, appartenente al ceppo Mazatec-Popoloca, è uno dei molti dialetti non Ispanici parlati nel Messico (Weitlaner & Hoppe, 1964). L'uso rituale mazateco di allucinogeni, come i funghi psilocibinici e i semi di morning glory contenenti ammidine dell'acido lisergico, è stato ampiamente reso pubblico con le ricerche di R. Gordon Wasson e Albert Hofmann, tra gli altri (Wasson & Wasson, 1957; Wasson, 1963; Hofmann, 1964; Hofmann, 1980).

Rassegna delle fonti letterarie

Benché l'uso dei funghi e della Morning glory fosse documentato dai conquistadores Spagnoli e dai cronisti che arrivarono in Messico durante il 16° secolo (Wasson, 1963), la letteratura sulla *S. divinorum* è relativamente recente. Wasson originariamente propose che questa salvia fosse la pianta conosciuta agli Spagnoli con il nome Nahuatl (Azteco) *pipilzintzintli*, ma nuove ricerche suggeriscono che il nome Messicano si riferisce probabilmente alla *Cannabis sativa* L. (Diaz, 1979).

Vi sono svariati nomi comuni per la *S. divinorum* e quasi tutti si possono ricondurre all'associazione della pianta con la Vergine María. È conosciuta dai Mazatechi con il nome di *ska María* o *ska Pastora* oltre a un numero di nomi spagnoli come *hojas de María*, *hojas de la Pastora*, *hierba (yerba) María* o *la María*. I mazatechi credono che questa salvia sia una incarnazione della Vergine María e prestano la massima cura per evitare di pestarla o di danneggiarla quando vengono raccolte le foglie, che sono usate sia per curare che nella divinazione.

Tentativi di identificare *ska María Pastora* vennero intrapresi congiuntamente alle spedizioni antropologiche intraprese da uno dei principali antropologi del Messico, l'ingegnere di origine austriaca Roberto G. Weitlaner, che scoprì l'uso nativo dei funghi allucinogeni tra i Mazatechi nel 1936 (Wasson, 1963). Durante una spedizione nel 1938, il futuro genero di Weitlaner, l'antropologo americano Jean B. Johnson apprese

che i Mazatec impiegavano un “tea” fatto con le foglie schiacciate di una “yerba María” per la divinazione. La preparazione veniva usata in maniera simile ai funghi ‘narcotici’ e alla ‘semillas de la Virgen’, che più tardi furono identificati come semi di Morning glory (Johnson,1939). Blas Pablo Reko, che conosceva bene Weitlaner, riferì di una ‘pianta magica’ impiegata dagli Indiani Cuiatec e dai Mazatechi per produrre visioni. Era conosciuta come *hoja de adivinacion* (foglia di profezia) e benché Reko non potesse identificare la pianta, molto probabilmente si trattava di *S. divinorum* (Reko,1945).

Nel 1952 Weitlaner descrisse l’uso di una yerba (hierba) de María da parte dei Mazatechi di Jalapa de Díaz, un piccolo villaggio nello stato d’Oaxaca. Secondo il suo informatore, le foglie di questa pianta erano raccolte dai curanderos (sciamani o guaritori), che si recavano sulle montagne e le raccoglievano dopo una serie di genuflessioni e preghiere. il fogliame usato nelle guarigioni veniva sfregato tra le mani quindi se ne faceva un infuso con 50 o 100 foglie, usando la dose maggiore per gli ‘alcolisti’. Verso mezzanotte il curandero, il paziente e un’altra persona si recavano in un luogo buio e tranquillo (forse una casa) dove il paziente ingeriva la pozione.

Dopo circa 15 minuti gli effetti iniziavano a manifestarsi. Il soggetto poteva entrare in uno stato di trance semi-delirante e dal suo discorrere il curandero emetteva una diagnosi dopo di che poneva termine alla sessione bagnando il paziente con una parte della pozione tenuta da parte per questo scopo. Il bagno probabilmente poneva fine allo stato d’intossicazione. Oltre a queste pratiche di guarigione, la yerba María serviva anche per profetizzare sui furti o sugli smarrimenti (Weitlaner,1952)

Cinque anni dopo il botanico messicano A. Gomez Pompa, raccolse dei campioni di una salvia conosciuta come “xka (sic) Pastora”. Notò che la pianta era usata come un allucinogeno (alucinante) e una dose era approntata con da otto a 12 paia di foglie. Finché non fu disponibile materiale fiorito, non si riuscì ad identificare la salvia se non come genere (Gomez Pompa,1957). Il campione olotipico (completo) di *S. divinorum* fu acquisito da Wasson e Hofmann nel 1962 in una spedizione con Weitlaner. Pianta fiorite furono loro portate nel villaggio di San José Tenango, ma non fu loro permesso di visitare il luogo in cui ska María Pastora cresceva. Questa collezione venne inviata a Epling & Játiva-M. che la descrissero come una nuova specie di Salvia, **Salvia divinorum** (Wasson,1962; Epling and Játiva-M.,1962).

Wasson fu il primo a descrivere personalmente gli effetti di ska Pastora, descrivendo le esperienze che aveva avuto, con altri membri del suo gruppo, dopo l’ingestione di diverse dosi di una pozione preparata con le foglie della pianta. In una sessione nel luglio 1961, alla quale anche lui aveva partecipato, una curandera (le donne sciamano sono molto comuni tra i Mazatechi e altri popoli del Messico) premette con le mani il succo di 34 paia di foglie in un bicchiere e lo allungò con acqua. Wasson bevve il fluido

scuro e scrisse che sebbene gli effetti si manifestassero molto più velocemente che con i funghi, duravano molto meno. Egli vide soltanto “colori danzanti in elaborati, tridimensionali disegni” (Wasson. 1962). Richiamando l'esperienza, più tardi affermò (comm. pers.):

Alcuni tra noi (io incluso) avevano provato l'infuso di foglie e pensammo di aver sperimentato qualcosa, anche se molto più debole delle specie di funghi di Psilocybe.

Hofmann e sua moglie Anita, che accompagnarono Wasson durante una spedizione l'anno seguente, presero un'infusione preparata rispettivamente con cinque e tre paia di foglie di *S. divinorum*. La signora Hofmann “vide sorprendenti immagini colorate dai bordi brillanti” mentre Hofmann si ritrovò “in uno stato di sensibilità mentale e d'intensa esperienza, che, in ogni modo non erano accompagnati da allucinazioni”. (Hofmann, 1980).

María Sabina, la sciamana Mazateca resa famosa da Wasson, che vive(va) sugli altipiani mazatechi nella città di Huautla, in Oaxaca, accennò brevemente al suo uso della pianta nell'autobiografia (Estrada 1977):

Se io ho un malato durante la stagione in cui i funghi non sono disponibili, allora mi rivolgo alle foglie della Pastora. Spremute (molido) e prese, lavorano come i “bambini” (i funghi). Certo, la Pastora non è altrettanto potente.

Roquet e Ganc, nel loro lavoro, accennano che i Mazatechi preparano una dose di *S. divinorum* con 120 paia di foglie spremute e usano la pianta solo quando i funghi e i semi di morning glory non sono a disposizione. Roquet e i suoi assistenti usarono la pianta per un paio di volte, durante le loro ricerche psichiatriche con agli allucinogeni messicani e affermarono di aver avuto difficoltà nel lavorare con lei. (Roquet, 1972) José Luis Diaz e i suoi collaboratori studiarono l'uso di *ska María Pastora* fatto negli altipiani mazatechi durante gli anni '70. Lo stesso Diaz prese l'infuso di *Salvia*, con la supervisione di una sciamana, Doña J., in sei differenti occasioni, notando di volta in volta un'accresciuta sensibilità agli effetti della pianta. Le prime trasformazioni che notò furono una serie di complesse figure lentamente cangianti (patterns) che avvenivano solo nella completa quiete e ad occhi chiusi. Non vi erano i disegni geometrici colorati che sembrano caratterizzare l'ingestione d'altri allucinogeni e non vi erano neppure immagini auditive. Dopo un breve periodo si accorse di fenomeni periferici, come un sentimento di leggerezza all'estremità e strane sensazioni alle giunture. L'apice dell'effetto, accompagnato da vertigini o nausea (*mareo*), durò circa 10 minuti e sparì dopo circa mezzora dall'ingestione dell'infuso. Altri effetti più sottili sembrarono perdurare per ancora qualche ora (Diaz, 1975°).

Hofmann (Hofmann, 1964) e Diaz (Diaz, 1975°) eseguirono entrambi ricerche sulla chimica della Salvia d. senza isolare o identificare alcun principio attivo. Come abbiamo già notato, le descrizioni in letteratura enfatizzano la mitezza degli effetti della pianta. Vi sono molti modi per ottenere delle visioni, oltre l'ingestione dei classici "allucinogeni" come mescalina, LSD e psilocibina. Tra questi vi sono gli esercizi di meditazione, la preghiera, l'infermità mentale, la malattia (soprattutto se accompagnata da febbre), l'avvelenamento, l'esperienza pre-morte, e la suggestione (effetto placebo). Per questo, prima di condurre studi chimici e animali decidemmo di tentare di chiarire il ruolo di *S. divinorum* quale produttrice di visioni tra gli indiani Mazatechi.

Guarigioni Mazateche

Il rapporto seguente si è basato su un lavoro sul campo con un curandero mazateco, o guaritore, che vive accanto alla riserva Alemán nello stato Messicano d'Oaxaca, a circa 100 Km. dal porto di Vera Cruz. Benché uno studio basato sull'informazione proveniente da una sola fonte sia aperto alle critiche, la natura gelosa e tendente ai segreti degli sciamani nativi lavora contro i metodi statistici di rilevamento. Visitando molti sciamani in una sola zona si rischia veramente di diminuire le quantità d'informazioni raccolte, giacché ogni Curandero può temere che il visitatore racconti i suoi segreti per dare il "potere" a qualche rivale. Per loro, il magico può causare danni o ammazzare. Wasson e Richard E. Schultes entrambi hanno commentato la difficoltà di prendere contatti con i Curanderos di questa regione (Wasson e Wasson, 1957; Schultes, 1941).

Don Alejandro, l'informatore, parlava solo il dialetto Mazateco. Uno dei suoi figli fece da interprete, traducendo dalla lingua natale in spagnolo. Le informazioni che fornirono gli autori erano raccolti in frammenti durante molte visite durante l'estate del 1979 e autunno di 1980.

Le guarigioni e la religione Mazateche sono unite in una maniera comune a tutte le culture tradizionali. Questo è piuttosto estraneo alla medicina scientifica occidentale che è isolata dalla religione, fuorché per quando ormai non serve più nessuna cura. La descrizione breve di guarigioni Mazateche, basata principalmente sul lavoro con Don Alejandro dovrebbe aiutare a spiegare l'utilizzo di *ská María Pastora* e le sue altre sorelle piante curative. I Mazatechi (il nome, preso dalla città di Mazatlan, in effetti, fu imposto ai nativi dagli Spagnoli) sono apparentemente cristiani cattolici, ma hanno incorporato molti elementi del loro credo tradizionale nelle concezioni di Dio e dei Santi, che essi considerano fossero i primi guaritori. Il più importante tra loro è San Pedro, o san Pietro, di cui si dice abbia curato un Gesù bambino infermo e in lacrime con l'utilizzo rituale del tabacco (***nicotiana spp.***). Il tabacco è considerato un problema di salute negli Stati Uniti e in molti altri paesi, ed i suoi acuti effetti farmacologici sono

dovuti all'alcaloide *nicotina* (Larsen et al., 1961).

Oltretutto, per i Mazatechi, come per quasi tutti gli Indiani mesoamericani, è il più importante agente curativo nella “farmacopea”. La foglia di tabacco fresco è asciugata, macinata e mista con calce (?) per formare una polvere conosciuta ai Mazatechi come *SANPEDRO* (sampietro); il “migliore” è preparato nel giorno del santo, 29 Giugno (Incháustegui, 1977). La preparazione è più familiarmente conosciuta col suo nome *Nahuatl* : **Picietl (Piciete)**. È indossato in ciondoli e amuleti come protezione contro vari “malanni” e stregonerie, ma la parte più importante del suo utilizzo è nelle **limpias**, o purificazioni rituali. Può essere usato da solo, con una preghiera e *copal* (un incenso ottenuta dalla resina di **Bursera Spp.**) (Díaz, 1975b), o nella mescolanza con erbe come basilico (**Ocimum Spp.**) o marijuana(**Cannabis sativa**), uova, o varie altre sostanze. Chiunque venga da Don Alejandro per essere trattato solitamente prende la **limpia**. Questa rituale purificazione può essere la cura in se stessa, o può essere accompagnata da altre “medicine”. Al paziente è dato un pizzico della polvere SAN PEDRO (fasciata nella carta) da portare con loro ed utilizzare durante il periodo di risanamento.

----- Don Alejandro non utilizza marijuana, perché è illegale.

Si apprende a diventare sciamani compiendo un apprendistato informale, benché i Mazatechi insistano nell'affermare che sono istruiti da una progressione di visioni “da” e “del” Paradiso, anziché da altra gente. Le piante psicotrope sono intimamente associate a quest'addestramento, che può durare sino a due anni o anche più a lungo. In quest'area d'Oaxaca, nonché nella regione degli altipiani visitata da Díaz, gli induttori di visioni sono presi sistematicamente ad intervalli di una settimana o di un mese. Quando si diventa guaritori le piante allucinogene sono ingerite molto meno frequentemente. Il processo incomincia prendendo dosi via via crescenti di *Salvia divinorum* per un certo numero di volte, tanto da diventare familiari con “la via per il paradiso”. Poi si passa alla presa di padronanza con i semi di morning glory (**Rivea corymbosa**(L.), Hallier, F.) e infine si impara ad usare i funghi sacri. C'è una rigida dieta da seguire durante questo tempo. Gli alimenti “caldi” come aglio e *chili peppers* sono molto limitati, e v'è l'obbligo di astenersi da sesso ed alcool per lunghi periodi. Lo stesso, molti sciamani Mazatechi incorporano l'alcool nel loro allenamento e bevono durante le cerimonie (Wasson e Wasson, 1957). Infrangere questa dieta, o *dieta rituale*, secondo Don Alejandro può condurre alla pazzia, e, dato che tali obblighi richiedono maturità, bisogna essere almeno 30enni, prima di diventare Curanderos.

Un confronto tra gli allucinogeni mazatechi.

Ska María Pastora è, farmacologicamente, la più debole delle tre piante allucinogene. Dopo la sua ingestione si suppone che la vergine María parli alla persona, ma solo in assoluta QUIETE ed oscurità. L'esperienza relativamente morbida è prontamente posta al termine dal baccano (come l'alto tono di voce) o dalla luce. Don Alejandro dice che gli effetti di **tu-nu-sho**, la semenza fiorita (**Rivea corymbosa**), sono affini a quelli della MARÍA (Salvia divinorum) perché le due piante sono sorelle (son hermanos) sotto la protezione della vergine María e San Pedro. Una "dose" che ci fornì pesava 9.6 grammi e consisteva di circa 350 semi di R. CORYMBOSA la. Un breve rapporto su un'altra morning glory (**Ipomoea purpurea** Roth) notò che l'ingestione di un grosso numero di semi produceva effetti affini alla LSD, ma con una marcata componente narcotica caratterizzata da sonnolenza e torpore (Savage & Al., 1972). Humphrey Osmond ha notato anche un effetto narcotico dosando sé stesso con semi di R. corymbosa (Hoffer & Osmond, 1967). L'attività delle morning glory pare essere dovuto all'Amide dell'acido D-lisergico (**ergina**) e altri alcaloidi simili (Schultes & Hofmann, 1980). Una cosa interessante, gli autori scoprirono una Woodrose (**Argyreia** spp.) crescere nelle vicinanze del villaggio Dove Don Alejandro viveva. L'Argyreia SPP. contiene composti LSD-simili (Chao & Der Marderosian, 1973). Quando gli fu chiesto se usasse la pianta, Don Alejandro disse di no, perché porta la gente alla pazzia. Il Curandero aveva anche diverse specie orticole di Coleus SPP. che crescevano accanto alla casa. WASSON notò che i Mazatechi credono che il COLEUS sia medicinale o un'erba allucinogena simile alla Salvia divinorum (WASSON, 1962). In ogni caso, Don Alejandro sostenne che le piante non erano medicinali e che sua figlia le aveva comprate al mercato perché erano belle.

Secondo Don Alejandro **ni-to**, o il fungo-che -si-mangia (*hongos para tomar*, probabilmente non una traduzione letterale, vedi WASSON, 1980) è diverso dalle altre due piante. Il fungo è *delicato* (delicato), *nervoso* (nervoso), *una cosa de envidia* (una cosa d'invidia). Disgraziatamente le traduzioni inglesi di questi termini non comprendono il concetto Indo-ispánico del "magico" che ha aspetti pericolosi e sinistri. Santa Ana e San Venanzio, i santi curanderos associati ai funghi, non erano guaritori altrettanto validi quanto San Pedro e la Virgén María, i patroni della salvia e della morning glory. Mangiare troppi funghi può "far diventare qualcuno pazzo" e le visioni sovente sono *trucos* (trucchi). Un altro informatore Mazateco attribuì tali connotati alle visioni, affermando che si deve separare la forma vera dal falso (Incháustegui, 1977). Wasson ha riportato che l'uso errato del fungo può condurre fino alla follia (Wasson & Wasson, 1957). Munn e Wasson hanno dato ulteriori descrizioni dell'utilizzo sciamanico dei funghi tra i Mazatechi (MUNN, 1979; WASSON, 1980). Psilocibina e psilocina, i composti che causano le visioni nei funghi, furono isolate da Hofmann, che usò sé stesso come soggetto per testare la loro attività. Riferì che una dose di 2.4 grammi di **Psilocybe mexicana** Heim seccata (una quantità media per un Curandero) produsse effetti a cui non aveva potuto resistere o controllare. Un collega "si

era trasformato” in un prete Azteco ed al culmine dell’esperienza sentì che si sarebbe “lacerato in questo gorgo di forme e colori sino a dissolvere” (Hofmann, 1980). Quest’esperienza era proprio differente da quella morbida prodotta da *Salvia divinorum*. Come Don Alejandro affermò essa, “ la *María*, invece, ti accetta(*la María, en cambio, te acepta*).”

Gli utilizzi di *Salvia divinorum* come farmaco

Grazie allo Sciamano i ricercatori impararono che la pianta potrebbe anche essere usata come “ una medicina”, oltre che per l’induzione di visioni. Una bassa dose serve alla stessa stregua di ciò che i ricercatori interpretarono essere “un tonico” o “ un toccasana”, nonché per guarigioni “ magiche” (Don Alejandro non utilizzò questi termini). Un infuso, preparato con quattro o cinque paia di foglie fresche o seccate può essere bevuto dal bicchiere (*vaso*) o preso a cucchiainate (*cucharada*) secondo il bisogno. È usata per curare i seguenti “ malanni”, benché possano esserci eventuali altri utilizzi: Aiuta a defecare e urinare. Ferma la diarrea (apparentemente la pianta è creduta adatta a regolare le funzioni eliminatorie).

È dato agli infermi, ai vecchi o ai morenti per ravvivarli o alleviare i loro malanni. La gente che è pallida, bianca e quasi pronta a morire (che hanno anemia) possono recuperare prendendo la *María*.

Può essere presa per alleviare le emicranie e i reumatismi (in ogni modo, quando è presa in alte dosi per indurre visioni, sovente lascia con un’emicrania la mattina seguente, a detta del Curandero).

C’ è una malattia semi-magica conosciuta come ***panzon de barrego***(sic), o “ pancia gonfia”, che si ritiene venga causata da una maledizione di un ***brujo***, o mago “nero” (malefico). L’addome della vittima si dilata a causa di “ un masso” che è stato messo all’interno. Prendere la *Salvia* causa l’eliminazione di questa “ pietra” e la pancia ritorna alle dimensioni normali. I Ricercatori incontrarono un vecchio sciamano che mostrò loro la sua pancia raggrinzita e sostenne di aver curato se stesso dalla “ malattia”, utilizzando “ la *María*”. Don Alejandro confermò” il malanno” e” la cura”.

Divinazione con *Salvia divinorum*.

Salvia divinorum può essere preparata, come infuso, con da 20 (circa 50 g.) a 80(circa 200 g,) o anche più paia di foglie fresche per indurre le visioni e può essere presa dal Curandero, dal paziente(o apprendista) o da entrambi, dipende dalla situazione. Solo la foglia fresca serve per la divinazione. A questo livello di dosaggio, la SALVIA è usata per predire il futuro, trovare la causa e la cura ai malanni ed ottenere risposte alle domande circa amici, nemici e parenti. Nell’addestramento sciamanico, il futuro guaritore prende la *María* per apprendere i metodi di guarigione e per identificare ed

utilizzare le piante medicinali (presumibilmente c'è un albero in Paradiso che contiene in sé tutte queste erbe, e si conversa di loro con Dio ed i Santi, sotto l'influenza degli allucinogeni). Dopo le sessioni in compagnia del maestro, che prende l'infuso insieme all'apprendista per seguirlo da vicino durante il tragitto, il futuro guaritore può continuare a studiare da solo finché arriva il tempo per apprendere l'uso della pianta successiva nella sequenza. Don Alejandro disse ai Ricercatori che SALVIA, i semi di Morning glory ed il Fungo raccontavano tutti la loro *historia* (storia o racconto) e **skamaría** era l'insegnante migliore dei modi di curare, giacché da lei si poteva imparare di tutto. Durante il corso delle visite, i Ricercatori poterono partecipare a due sessioni sotto la guida dello Sciamano. Siccome gli allucinogeni non sono mai presi senza un valido proposito e poiché i Ricercatori venivano da "l'università", le cerimonie furono orientate per insegnar loro i metodi di cura e specialmente gli utilizzi di María e delle altre piante medicinali. Don Alejandro annunciò che dovevano attenersi alla dieta rituale per 16 giorni, benché potessero ugualmente prendere bagni e bere la birra (dopo la prima volta, la dieta per S. divinorum è solo di quattro giorni).

Le preparazioni per le due cerimonie furono essenzialmente le stesse. Appena venne il buio

(dalle 19:30 alle 20:00) il Curandero incominciò a preparare l'infuso di Salvia. Le foglie furono prima contate in paia, sino a formare la dose d'ogni persona e sistemate ordinatamente in gruppo con i loro piccioli allineati. Allora Don Alejandro prese una parte di una di queste cataste e la premette con le mani in una piccola boccia, parzialmente riempita con acqua (fig. 3).

Man mano che più foglie erano spremute ed aggiunte, il liquido diventò verde scuro per la clorofilla. Dopo che la pozione fu preparata, venne versata in un bicchiere d'acqua attraverso un setaccio (fig. 4).

Durante le preparazioni per la seconda sessione un po' di schiuma si formò in cima al bicchiere e il

Curandero rise. Spiegò, tramite suo figlio che la schiuma (espuma) era un'indicazione di forza e la María sarebbe stata molto potente quella sera. Il bicchiere era coperto con coppe invertite per "prevenire la fuga dell'umore (*que no salga el humor*)". Benché le foglie di Salvia divinorum possano, da quel che si dice, essere conservate fresche per una settimana o più, quando è fasciata nelle grosse foglie di **Xanthosoma robustum** Schoff, l'infuso è ritenuto stabile per un solo giorno. Le foglie passe furono messe da parte per essere scartate in un luogo dove non sarebbero passati né genti né animali. In ogni modo, Don Alejandro affermò che si sarebbero potute ancora usare, per metterle sulla testa di una persona dopo la sessione, perché erano una materia rinfrescante. Il Curandero prese un bicchiere di María ed incominciò l'orazione. La sacra trinità, san Pietro, la vergine María ed altri santi erano chiamati per vigilare i partecipanti e per insegnare ai visitatori i modi di cura:

In **NOMINE SPIRITU SANTO** (questa frase "latina" fu sempre tradotta in vernacolo come:

Nel nome del Padre, del Figlio e dello Spirito Santo)

Santissimo Sacro Signore san Pietro

Nel nome di LEANDROS (il soggetto)

In NOMINE SPIRITU SANTO

MARÍA, mostra a LEANDROS,

Che egli possa vedere ciò che c'è nel mondo

Perché vorrebbe studiare tutte le categorie di medicine

Signore Gesù Cristo, mostra a lui

Possa egli apprendere

Possa vedere tutti i ceti di piante medicinali

Tu, che conosci tutto, mostragli

Voglio che tu mostri a lui tutti i generi differenti

Di malanni e rimedi che esistono nel mondo

In breve tempo egli deve apprendere la tua storia

In NOMINE SPIRITU SANTO

sacra Santa Rosaria

Liberalo, che egli possa vedere

come a me hai mostrato

Possa costui riconoscere tutto ciò che è l'universo

Tutto ciò che è la tua storia

Egli vorrebbe apprendere con amore e sincerità

Voglio che tu gli mostri, mentre sto chiedendo il tuo favore

Tu, MARÍA e Signore Gesù Cristo, AMEN

Se c'è male o bene, risparmiarlo

Aiutalo con sincerità o amore

In NOMINE SPIRITU SANTO

Sacro signore san Pietro

Tu, anche, María, mostra a lui

Liberalo in modo che egli possa vedere

Non essere ingannevole

In questo giorno, proprio oggi

Che berrà (l' infuso di Salvia)

In NOMINE SPIRITU SANTO

sacro signore san Pietro

Aiuta questo LEANDROS

Possa egli crescere ancora

Possa egli apprendere le cose

tutto quello che c' è nel mondo

Tutto ciò che è buono

Tutto quello che riguarda la medicina

In NOMINE SPIRITU SANTO

sacro signore san Pietro

signore sant' Antonio, signore san Pietro, Gesù Cristo

Siete gli unici tre che conoscono circa la María

Dovete mostrargli tutto ciò che è medicinale

tutto ciò che è l'universo

tutto ciò che è la tua storia

Mostraglielo, non essere cattivo

In NOMINE SPIRITU SANTO

Sacro rifugio, signora Santa Ana (*stranamente viene usato il genere maschile: Signore Santa Ana – NdT.*)

Tu che sei buona, devi aiutarlo

Affinché conosca il nostro universo

Devi insegnargli ciò che ti chiedo

Affinché sia di gradimento al Signore san Pietro

che LEANDROS la prenda (la María)

In NOMINE SPIRITU SANTO

sacro signore san Pietro

Da due a quattro ore passarono in colloquio e raccontando storie. Lo Sciamano accentuò ripetutamente che era importante descrivere le visioni, “ se stai per apprendere o per capire qualcosa, hai l'obbligo di parlare.”

Finalmente era giunto il tempo per ingestione dell' infuso(tra le 21:00 e le 23:00 H). Secondo la consuetudine Mazateca, almeno una persona non partecipava, allo scopo di vigilare il resto (Wasson & Al., 1974). Come un'ultima protezione contro qualsiasi pericolo durante il “ viaggio” visionario, Don Alejandro eseguì *limpias*, o purificazioni rituali sui visitatori (fig. 5),

In NOMINE SPIRITU SANTO

Santissimo signore san Pietro

Questo limpia è per LEANDROS (soggetto)

Alzati, ascolta, poiché adesso il tempo è giunto

In NOMINE SPIRITU SANTO

Santissimo signore san Pietro

Chiedo il tuo favore per LEANDROS

Sanalo, curalo

Perché sto per purificarlo ora

aiutalo in questo attimo che possa essere purificato

Scaccia fuori i cattivi malanni che egli può avere

signore (san Pietro) frequentalo

Che egli possa vedere l'universo

Cosa c' è nel mondo

Tutto

Aiutalo, innalzalo

Possa vedere cosa c' è

Tutto quello che vorrebbe a sapere

Risparmialo, curalo

In NOMINE SPIRITU SANTO

Santissimo signore san Pietro

Bonifica quest'uomo

Che egli viva bene, viva meglio

Perchè quest'uomo è conosciuto da tutti i bambini di Dio

Sanalo, mentre

Presti attenzione ai suoi messaggi nell'attimo in cui lo sani

Curalo, aiutalo

E' questo ciò che sto dicendo

In NOMINE SPIRITU SANTO

Santissimo signore san Pietro

Signore Gesù Cristo

sai come risparmiarlo, come purificarlo

Curalo lui, non importa se qualcosa di male è caduto su di lui

Sanalo, curalo

Voglio che tu lo guarisca e lo risparmi da tutte le cose cattive

Essendo nelle mie mani, lo posso aiutare,

con la fede e il desiderio.

In NOMINE SPIRITU SANTO

Santissimo signore san Pietro

Santa trinità, curalo

Aiutalo, non permettere che male ricada su di lui

Appena l'orazione fu recitata, Don Alejandro consacrò il soggetto con il pezzo di **copal** immerso nel San Pedro. Il Curandero diede poi un pizzico di San Pedro da trasportare come protezione se sentiva del pericolo durante o dopo la sessione. Dopo una benedizione finale (fig. 6), le pozioni furono bevute e la luce spenta.

La sessione "uno": 18 Agosto, 1979

I partecipanti erano Díaz, Valdés e Don Alejandro, che sedette su una panca e vigilò gli altri durante il procedimento. Il Curandero e Díaz, che aveva preso la María diverse volte prima, hanno le dosi preparate da 50 paia di foglie. Valdés ricevè una dose da principiante preparata da 20 paia.

Le preparazioni si presero attorno alle 22: 30. I visitatori condivisero una grossa branda mentre lo sciamano giaceva sul *petate*, o stuoia per dormire che era srotolata sul pavimento.

Díaz sedette tranquillamente sul lato della branda dopo che le luci furono spente. Circa 15 MIN dopo l'ingestione dell'infuso incominciò a vedere delicate visioni, sottili come colonne di fumo nell'oscurità totale. Non c'era differenza se i suoi occhi erano aperti o chiusi. Decidendo di parlare, vide una luce che scomparve appena incominciò a

descriverla. Le immagini aumentarono d'intensità. Vide una grossa montagna di ghiaccio, come sebbene era alla base di una rupe formata da grosse le colonne di ghiaccio. Pian piano la visione cambiò in Cerro Rabón, la montagna vicina, intimamente associata alle leggende Mazateche (Incháustegui, 1977). Verso le 23:00 h l'afflusso di immagini cambiò in luci con varie ombre color blu, indaco e porpora, disposte come in un vuoto spaziale. Secondo la sua prospettiva, egli viaggiava in mezzo a loro oppure queste si dirigevano verso di lui.

Vide una croce circondata da una luce e un manto. Appena descrisse l'"imagery" con le parole, gli sembrò che questa si fissasse più chiaramente nella memoria e sentì che gli sarebbe stata d'aiuto per ricordare più tardi l'esperienza.

Dopo circa 45 minuti dallo spegnimento delle luci, Don Alejandro iniziò a parlare con voce monotona. Suo figlio non interruppe per tradurre dal Mazateco. All'udire la voce dello sciamano, Valdéz (che aveva sperimentato solo poche brevi visioni, senza descriverle agli altri) vide un cielo nero con oggetti dai brillanti colori che vi stavano fluttuando. Si trovò improvvisamente proiettato in velocità verso uno di questi ed effettivamente sentì che stava accelerando nello spazio oltrepassando gli altri oggetti. La luce si diresse verso un villaggio mazateco, simile a quello del Curandero. Valdés lo vide dall'alto, come se si trovasse su una collina. Delle forme, simili a pinnacoli di fumo, si trovavano ai lati di qualche casa. Poi, improvvisamente, ritornò nello spazio e la visione dileguò.

Don Alejandro s'interruppe, accese la luce e uscì per cercare "una spia" che aveva sentito fuori della casa. Non trovò nulla, ma si sforzò di vomitare, il che, disse, avrebbe posto termine alle sue visioni. la sessione era durata circa un'ora, e l'ora successiva la si trascorse parlando di tutto quello che era stato visto. Il curandero disse ai due visitatori che durante la sessione aveva vegliato su di loro e si era reso conto di quello che avevano bisogno di sapere. L'anziano guaritore disse che dopo qualche ulteriore esperienza Díaz avrebbe imparato a guarire e a usare le piante medicinali. Egli fece il nome di una donna, un medico come Díaz, che avrebbe provato a intromettersi o sarebbe stata coinvolta con il suo lavoro. Don Alejandro ammonì Valdéz, che era rimasto tranquillo per tutta la notte, che era necessario parlare delle visioni e che avrebbe avuto bisogno di molte sessioni prima di poter imparare a guarire. Poi tutti andarono a dormire e si alzarono di buon mattino il giorno seguente.

Sessione due: 6 marzo, 1980

Durante questa sessione, molto più informale, Díaz e Valdés presero l'infuso di Salvia divinorum e furono controllati da Don Alejandro e suo figlio, nonché da Paul che

registrò gli avvenimenti del pomeriggio e della notte su nastro magnetico. I ricercatori erano arrivati al villaggio verso le 5 del pomeriggio e lo sciamano trascorse l'intero pomeriggio e la prima parte della sera parlando loro delle sue visioni del "Paradiso" e dell'ufficio (*escritorio*) che egli aveva lassù, vicino a Dio e a Gesù. Raccontò molte storie e leggende, tra le quali una sull'origine delle guarigioni. fu un pomeriggio molto divertente, che contribuì a creare un eccellente set & setting (Weil,1972) per l'esperienza degli ospiti con la Maria.

Díaz e Valdez ribevettero infusi preparati rispettivamente con 60 e 50 paia di foglie. Bevvero le pozioni alle 21:00 e si sdraiarono nella camera da letto di Don Alejandro, mentre il figlio del curandero e Paul sedevano sul letto accanto a loro. don Alejandro rimase nell'altra stanza. I due ricercatori parlavano a turno e furono interrogati dal giovane Mazateco ogni volta che il loro discorso s'interrompeva:

Paul – sono le nove, Leander e José Luis stanno bevendo (l'infuso di *Salvia*)...

----- (indica una pausa nella registrazione)

Díaz - *Nueve doce* (ha dato uno sguardo al suo orologio luminoso). *Empiezo a sentir algunos de los, de los efectos de la planta. Me siento muy relajado. Y he tenido en los últimos momentos muchas imágenes de plantas y flores. Mucha, muchos tipos de flores diferentes... algunos de ellos desconocidos para mí... De muchos colores. Siento mi cuerpo muy suave, como ligero. En los últimos momentos empezaba a se... a ver algunas imágenes como puntos de luz.* (Nove e dodici. Sto iniziando a sentire qualche, qualche effetto della pianta. Mi sento molto rilassato. E ho avuto, in questi ultimi minuti, molte immagini di piante e fiori. Molte, molti tipi diversi di fiori... qualcuno tra loro mi è sconosciuto... Di molti colori. Sento che il mio corpo è molto soffice, come se fosse leggero. Negli ultimi istanti iniziavo a se ...a vedere delle immagini come punti di luce) That's all for now. (Per ora è tutto)

Valdés - ...piante e fiori. Penso che fossero ciò che la gente chiama immagini eidetiche, dato che li vedo dopo aver chiuso gli occhi. Sono scomparsi. Sento come se mi stessi contorcendo dentro il mio corpo. Sensazioni molto, molto strane. Come se mi stessero... torcendo . Ragazzi, come se fossi un filo che si avvolge.

Díaz - *Nueve veinte. Las... la sensación de ligereza del cuerpo es más intensa. En un momento dado sentí como... como que sea (¿quisiera?) atravesar a un techo y las imágenes de plantas han cambiado y ahora he tenido sensaciones como estar flotando en la noche llena de estrellas y me doy cuenta que no es... no es fácil (dog barks) tener... de que no es fácil tener la fe que se (dog), que se nos pide. Que se me pide. Me siento muy... muy, como muy emocionado. Todas estas cosas (dog). Es todo por ahora.* (Nove e venti. Le... la sensazione di leggerezza del corpo è più intensa. In un certo momento mi sentivo come se stessi (se volessi?)attraversare un tetto e le immagini delle piante sono cambiate e adesso ho avuto sensazioni come se stessi

fluttuando nella notte piena di stelle e mi rendo conto che non è ...non è facile (*un cane abbaia*) avere ...non è facile avere la fede che ci (*cane*) che ci si chiede. Che chiede a me. Mi sento molto...molto, proprio molto emozionato, commosso. Tutte queste cose (*cane*) E' tutto per ora.

Figlio -¿*José Luis?*

Díaz - ¿*Sí?*

Son - ¿*Ya no ve más imágenes(sic)?* Non vedi più le immagini?

Díaz - *Sí, un poco. Tengo algunas más, pero no ha sido muy... muy intenso, ¿no? He visto... como si estuviera flotando en el cielo, como si hubiera entrado a... a... pues, como a una gran nave o algo así. Y... y como si fuera las cosas muy mecánicas adentro como una máquina... muy precisa e (sic) muy geométrica. Y en... y curiosamente, como si en algunos casos hubiera otra vez flores dentro de este lugar. Y volví otra vez a ver como muchas flores, pero como si fueran mecánicas, como si no fueran de... de verdad.* (Si, un poco. Ne ho visto qualche altra, ma non è stata molto intensa...molto, no. Era come se stessi fluttuando nel cielo , come se fossi entrato in...in...dopo, come in una grande nave, o qualcosa del genere. E ...e come se tutte le cose lì dentro fossero meccaniche, come in una macchina che è molto precisa e molto geometrica. E in ...e curiosamente, come se in qualche caso ci fossero degli altri fiori in quel posto. E son riuscito a vedere ancora come dei fiori, ma come se fossero tutti meccanici, come se non fossero ...reali.)

Figlio - *Cristo? ¿No lo viste?* (Cristo? Non lo hai visto?)

Díaz - *Pues... no. A veces me acordé de él, pero no, no sé presentó en una imagen, ¿no? A veces también pensé en unas imágenes de las que nos dijo..., nos dijo Don Alejandro. De los escritorios y... Pero, pero nada más.* (Beh... no. A volte ci ho pensato, ma non è apparso come un'immagine ,no? A volte penso anche a delle immagini che ci ha descritto... che Don Alejandro ci ha descritto. Dell'ufficio e ... Ma, ma nient'altro.)

Figlio - *No te enseñaron completo.* (Non ti hanno mostrato tutto.)

Valdés - *giù...E' molto difficile per me parlare. Come se qualcosa mi schiacciasse sul letto. Le braccia mi fanno molto, molto male (un cane abbaia). vedo delle cose, ma non c'è, non c'è (il cane abbaia - non si capisce...) Mi stanno proprio schiacciando. Molto difficile da descrivere. Vedo cose che assomigliano a frutti . Molto strano, posso vedere i semi.Vedo l'arancio (cane) e il giallo e i colori. Strano. Sembra frutta gigante.*

Figlio - ¿*Qué dice Leandros? ¿Qué fué lo que vi (sic)?* (Cosa dice Leandros, cosa ha visto?)

Díaz - *Dice que le cuesta... le cuesta más trabajo hablar. Que siente su cuerpo muy pesado* (i cani abbaiano durante tutta questa parte della registrazione). Dice che è difficile...per lui è difficile parlare. Che il suo corpo si sente molto pesante.

Figlio - *Mm-hmm.*

Díaz - *Que los imágenes no son.. son sutiles, ¿no? No son muy... no son muy intensas, ¿no?* (i cani continuano). *A veces logra... logra a ver algunos colores. Describe algunas flores, y como frutos.* (Che le immagini non sono...sono sottili, no? non sono molto ...non sono molto intense, no? Ogni tanto ci riesce...riesce a vedere qualche colore. Descrive dei fiori, e come della frutta.

Figlio - *Sí.*

Díaz - *Pero no hay... no hay imágenes así que son muy... muy...* (Però non ci sono... non ci sono immagini che siano molto...molto)

Valdés - *Hay muchas de semillas, ¿no? Esas... de melones, ¿no?* (C'è un mucchio di semi, no? Quelli ...dei meloni, no?)

Figlio - *Sí.*

Díaz - *¿Se sie... te sientes muy contento, no?* (Si se ...ti senti molto contento, no?)

Valdés - *Muy pesado* (sic). (Molto pesante)

Figlio - *¿No viste algo más?* (Non hai visto altro?)

Valdés - *Cosas, pero no puedo describerlas* (sic; sembrava piuttosto “ebbro” al momento) (Cose, ma non sono in condizione di descriverle)

Valdés - *... parece que está quemando, ¿no? Que tiene dos rayas* (croce con due braccia) *en vez de una, ¿no?* (...sembra che stia bruciando, no? Che abbia due braccia anziché una, no?)

Figlio - *Mm-hmm.*

Valdés - *Pa'ece (parece) este tiene fuego.* (Sembra che la cosa abbia del fuoco.)

Figlio - *Mm-hmm.*

Valdés - *Que hay como un cuerpo envuelto* (cani che abbaiano dall'inizio alla fine). (Che ci sia una specie di corpo avvolto intorno.)

Figlio - *Mm-hmm.*

Valdés - ... *de cruz* (cani che abbaiano dall'inizio alla fine). *Ya, ya había muchas cosas pero ya están des'pareciendo. Todo está como un* (lost to dogs) *muy negrosa.* (...di una croce. Adesso, adesso c'erano molte cose, ma stanno sparendo. E' tutto come un (perso a causa dei cani) molto scura.

Figlio - *Sí*

Valdés - *Parece como una pintura, pero todo en blanco y negro.* (Sembra una pittura, ma tutta a bianco e nero.)

Figlio - *Mm-hmm.*

Díaz - *Ví... ví que con la flor de la... de la... de la semilla de la Virgen. Bastante claramente con su color morado. I... Ipomoea violacea, ¿no? Yo tengo muchos, muchas imágenes si... si me fijo en ellas, ¿no? Se mueven bastante, ¿no?* (Ho visto, ho visto qualcosa come i fiori della ...i fiori del del seme della Vergine. Piuttosto bene, con il suo color porpora . I...Ipomoea violacea, no?Ho molte, molte immagini se ...se mi ci concentro, no? Si muovono abbastanza veloci,no?)

Figlio - *Sí.*

Díaz - *Pero la... el estado de estar muy contento ya hace rato ya se me quitó.* (Però, la sensazione di ...lo stato di contentezza mi ha lasciato poco fa.)

Figlio - *Mm-hmm.*

(i cani si calmano per un po')

Figlio - *¿Ya puede explicar mi 'apa?* (Mio padre può spiegare adesso?)

Díaz - *Sí. Fíjate, tenía... Creo que es... es importante también que le digas que... que no se siente mal porque, porque nosotros no... no... vemos lo que él vió...* (Sì. Guarda, avevo...penso che sia è anche importante che tu gli dica che... che non dovrebbe prendersela se noi ...noi non no abbiamo visto quello che ha visto lui...)

Figlio - *Mm-hmm.*

Díaz - ...*examente, porque nosotros venimos de... de una forma de... del ver el mundo... muy distinta, ¿no?* (...giusto,perchè noi proveniamo da un modo molto diverso di ...di vedere il mondo..no?)

Son - *Mm-hmm.*

Díaz - *Entonces por eso es que tenemos más dificultades para... para ponernos en... en contacto con Cristo.* (Bhe, per questo noi abbiamo molte più difficoltà per ... per metterci in...in contatto con Cristo.)

Figlio - *Con Cristo* (Con Cristo)

Díaz - *Y con lo Sagrado, ¿no?* (E con le cose sacre, no?)

Figlio - *Mm-hmm.*

Díaz - *Nos... nos pasan otras cosas, ¿no? O s'an (¿sean?) que no vea él qu'eso es como una falla, ¿no? De Uds. o de la planta ni mucho menos, ¿no?* (A noi... a noi accadono altre cose, no? Non dovrebbe considerarlo un fallimento,ecco. Vostro o ancor meno della pianta, no?)

Figlio - *Mm-hmm.*

Díaz - *Sino que nuest'a experiencia es muy distinta porque..., pues, vemos las cosas de otra forma, ¿no?* (Il fatto è che la nostra esperienza è molto diversa perché...bhe , noi vediamo le cose in maniera diversa,no?)

Figlio - *Sí.*

Díaz - *Es importante para él que... para Uds. que se den cuenta de eso, ¿no?* (E' importante che lui...per entrambi voi, che capiste questo, no?)

Son - *Mm-hmm.*

Díaz- *Yo me siento muy contento, ¿no? Por... por la experiencia así como está, ¿no?* (Mi sento molto contento di questa esperienza ... per quella che è , no?)

Son -*Sí.*

Díaz - *Pues, nada más eso.* (E poi, è tutto.)

Figlio - *Ah-ah. ¿Tu, Leandros, ve más imagen? ¿O ya con ese es lo mucho que viste?* (Tu , Leandros, vedi altre immagini, o questo è tutto quello che hai visto?)

Valdés - *Veo imagenes y parecen un poco pero... como los imagenes de la iglesia pero no tienen caras, ¿no?* (Vedo immagini che però sembrano... come le immagini di una chiesa, ma non vi sono i visi, no?)

Figlio - Mm-hmm.

Valdés - *Tienen... se, se ve este, los vestidos, ¿no? De, de oro y todo pero no hay imagen. No hay de caras, ¿no? Que se reconoce los...* (Hanno... si vedono questi, i loro abiti ¿no? Di, d'oro e tutto, ma non c'è nessuna immagine. Non c'è nessun viso, no? Che si possa riconoscere ...)

Figlio - Mm-hmm.

Valdés - *Tienen los manos así como... como tienen...* (perduto; figure che piangono).(tengono le mani così.. come...)

Figlio - *¿Ese es todo lo que viste?* (E' tutto quello che hai visto?)

Valdés - *Estoy viéndololo ahorita, ¿no? Ya... ya estoy viéndolo.* (le vedo adesso, no? Sto.. sto ancora vedendole.)

Díaz - *Yo sigo también viendo, si me fijo, sigo teniendo imágenes.* (Anch'io le vedo, se faccio attenzione, continuo ad avere immagini.)

Figlio - Mm-hmm.

Díaz - *Como flores otra vez, muy luminosas, ¿no? Como si tuvieron una luz interior.* (Ancora come fiori, molto luminosi, no? come se avessero una luce interna.)

Figlio - Sí.

Díaz - *Creo que tiene mucho que ver con el... con el cielo que nos... que nos explicaste hace rato, ¿no? De cómo es el cielo* (Penso che abbia molto a che fare con il...con il Cielo...di cui ci ha parlato poco fa,no? Di come'è il Paradiso.)

Figlio - Mm-hmm.

Díaz - *Lleno de música. Lleno de flores, ¿no?* (Pieno di musica, pieno di fiori, no?)

Valdés - *Ve algo ent'e... entre cruz y espada que es my dorado, muy... tiene muchas joyas?* (Vedo anche qualcosa tra ... tra una croce e una spada che è tutta coperta d'oro, completamente...ci son tanti gioielli.)

Figlio - Mm-hmm... *¿Sigue la imagen, todas, o ya se está allí?* (l'immagine continua, tutte, o è ferma lì?)

Valdés - *Si, sí, sí... sigue, sigue. Pero cambia, ¿no? Sigue y cambia, ¿no?* (Si , sis, si ... continua , continua. però cambia, no? continua e cambia, no?)

Figlio - *Sí.*

Valdés - *Ya es... ya es seguro que sea una, una espada... ya se des'pareció* (E' . .. è chiaro che è una, una spada...adesso è sparita)

Díaz - *Ya tenía como una luz... como una luz. Estas, estas flores que decía que tenían como una... como muy iluminados en el centro. Se ha convertido ahora como en una luz.. fuerte, ¿no?* (Adesso ho visto come una luce ...come una luce. Erano i fiori di cui parlavo che avevano come una... erano come molto luminosi nel centro. Adesso sono diventati come una luce... forte, no?)

Figlio - *Mm-hmm.*

Díaz - *Que viene como de arriba.* (Che arriva come da sopra.)

Valdés - (si confonde nel rumore di un camion)... *es... es forma entre cruz pero tiene todo adentro. Tiene de todo... luces y animales... de... de gente, de plantas. Todo. (lost)... de muchos colores, como una pintura. Colores muy, muy vivos. De animales.* (è... è una forma tipo una croce, ma centro c'è tutto. C'è tutto ...luci e animali ... della gente, delle piante. Di tutto (lacuna) ...di tanti colori, come una pittura . Molto, molto vivi. Degli animali.)

Valdés - ...ricevere questa immagine...Mi sembra di poterci riuscire quando mi ci concentro veramente, . Sparisce e torna ad essere le cose che vi sono intorno, come se lo perdessi nelle cose che stanno accadendo , ma se ci lavoro sopra e mi concentro lo posso far tornare. *Es que puedo... Yo, yo pierdo el imagen de la cruz. Pero si pienso en esta cosa, este que me vuelve otra vez, ¿no?* (E' che riesco... lo, lo perdo l'immagine della croce . Ma se penso a questa cosa, mi ritorna un'altra volta, no?)

Figlio - *Sí.*

Valdés - *Me vuelve otra vez y puedo fijar en esto y concentrar en esto. Pero es bastante difícil. Pero que... se puede... mantener esta cosa.* (Mi torna di nuovo e posso prestarvi attenzione, e concentrarmi. Ma è piuttosto difficile. Però si può ...si può...mantenere questa cosa) *I that's something about this state that you learn to work around in. Pull images out as you need them (Inglese).* C'è qualcosa in questo stato che ti permette di lavorarci attorno. Far riaffiorare le immagini quando ne hai bisogno.

Díaz - ...Immagini di... *like flying from a certain... come volare da un certo...De al... de*

volar como en una cierta altura. Y ten (sic) como los campos sembrados de... y llenos de plantas. Sembrados de todas las planta que producen... producen granos que se usa para comer. Campos muy bien trabaja'os (perso per il rumore). (di... di volare ad una certa altezza. e ci sono campi coltivati a... e pieni di piante. Piantagioni di tutte le piante che producono... producono grano che si usa per mangiare. Campi molto ben curati.)

Valdés - ...que parece entre un castillo, o como un... una iglesia Bizantina. Estoy bastante lejos de esta cosa. No está a su lado, ¿no? No está cual (sic) debe estar. Parece un poco, ¿cómo se dice? "tilted on its side"? Estoy muy lejos y como de estoy muy arriba de esta cosa (di nuovo i cani) Ya parece más como castillo. Lo veo desde del... desde muy lejos como está de allá. Como esta debajo de mí. Pero no veo nada de ge... de gente. No hay nadie. Hay banderas. De todas colores. (...che sembra essere qualcosa tra un castello , e una ...una chiesa bizantina. Sono abbastanza lontano da questa cosa. Non al suo fianco , no? Non è come dovrebbe essere. Sembra un po', come si dice, "tilted on its side"? Sono molto lontano ed è come se fossi molto in alto sopra di lui. Ora è di nuovo come un castello. Lo vedo dal... da molto lontano .Come se fosse sotto di me. Ma non vedo gen... nessuna persona. Non c'è nessuno. Ci sono bandiere. Di ogni colore.)

Díaz - es interesante. Cuando mencionaste castillo yo también empecé a ver.
(Interessante. Quando hai menzionato il castello, anch'io ho iniziato a vederne uno.)

Figlio - Un castillo. (U castello.)

Valdés - ya... ya lo veo. Veo como sombras, formas, pero no tienen... No veo caras en estas cosas, ¿no? Son como... ¿como se dice, "just covered by robes"? Hacen... y marchan pero son muy, muy serios estas cosas. (Ancora... lo vedo. Vedo ombre, forme, ma non ci sono... non vedo visi in queste cose, no? Sono cose... come si dice "covered by robes"? (coperte con tuniche?) Agiscono... e marciano ma sono molto serie queste cose.)

Figlio - ¿Es todo lo que ves? (E' tutto ciò che vedi?)

Valdés - Todavía estoy mirándolo, ¿no? Es nuevo para mí, esto. Esta cosa. (La sto ancora vedendo, no? Questa è nuova per me. Questa cosa.)

Cinquanta minuti sono trascorsi. Il figlio del *curandero* riduce la sessione dicendo che i rumori del villaggio, specialmente i cani, erano troppo forti per avere un'esperienza significativa. Appena Díaz e Valdés lasciarono il letto, barcollarono e inciamparono. Benché dicessero che la loro mente si sentiva lucida, il tape recording rivela la loro pronuncia biascicante and e quanto il loro modo di discorrere fosse disagevole e rotto.

Díaz commentò, "E' come se il corpo sia ebbro (*borracho*) e la mente no." Don Alejandro trascorse l'ora successiva discutendo le loro visioni nei dettagli assieme a loro, dicendo che con più esperienza le loro visioni sarebbero divenute più chiare e più significative. Disse agli ospiti che Paul soltanto doveva guidare alla loro partenza, dato che gli effetti de *la Maríá* sarebbero durati l'intera notte.

Mentre l'auto viaggiava nel profondo buio di Oaxaca, Valdés vide altre immagini in forma di icona. Tra di loro vi era la Virgen de Guadalupe in mezzo a bandiere bianche rosse e verdi. Ogni volta che l'immagine iniziava a svanire, trovò che poteva farla tornare se solo voleva. Giunti alla loro destinazione i tre ricercatori fecero un leggero pasto. Díaz si avvolse in un *sarape(poncho)*, perché aveva freddo. Notò che la cosa gli era già successa, ogni volta che aveva preso l'infuso di *Salvia*. Il suo battito cardiaco, misurato prima da Paul, era rallentato dai suoi normali 60 battiti per minuto a circa 50. Prima, a casa dello sciamano, Paul aveva girato il raggio luminoso della pila tascabile negli occhi dei ricercatori ed entrambi avevano avuto una reazione normale. Valdés si sentiva "pesante" and "dolorante", specialmente nelle spalle e nelle braccia. Dopo una doccia, andarono tutti a letto.

Quando spensero le luci (verso le 23:30 h cioè 2.5 h dopo aver ingerito *la Maríá*), Valdés iniziò ad avere altre visioni. Vide una luce purpurea che mutava in ape o in una forma tipo falena che poi divenne un anemone di mare pulsante. La imagery si espanse sino a divenire un deserto pieno di forme mobili simili ai fichi d'India (*Opuntia* spp.). Durante la prima sessione, l'estate precedente e per tutta la sera Valdés sentì arrivare le visioni in una maniera simile a qualcosa tra un cartoon in movimento e un film senza sonoro. Improvvisamente, tuttavia, si ritrovò in un bizzarro, paesaggio colorato mentre parlava a un uomo che nello stesso momento gli stringeva la mano e si aggrappava ad essa. Accanto a loro vi era qualcosa che assomigliava all'intelaiatura di un modello in legno gigantesco di aereo, la cui struttura tubolare interna aveva i colori dell'arcobaleno. La "realtà" di quanto stava vedendo lo sorprese. Dopo un breve istante, la scena del deserto riapparve e Valdés pian piano scivolò nel sonno. I tre ricercatori si svegliarono presto il mattino dopo e tutti e tre erano di ottimo umore.

Discussione and conclusioni: etnofarmacologia of *S. divinorum*

Usi medicinali

Va oltre lo scopo di questa pubblicazione commentare l'efficacia di *S. divinorum* nei trattamenti dei vari "folk ailments" (malesseri popolari). Non ci sono abbastanza informazioni disponibili per prendere una decisione scientifica. In questo momento sarebbe più pratico e certamente più utile avere a disposizione un maggior numero di

lavori sul campo, piuttosto che provare a fare screening di laboratorio alla ricerca di qualche proprietà anti-infiammatoria, catartica, analgesica, diuretica, tonica e magica. In ogni modo, va messo in luce che specie di *Salvia* sono usate come medicinali in tutto il mondo, e lo stesso nome del genere deriva dal Latino *salvare*. Il nome Middle English per la salvia (sage) *ea save or saue*, dal Latino *Salvia* via Old English *Saluie*) (Oxford English Dictionary, 1971), and Chaucer ne fa menzione come cura per ferite e arti spezzati in "The Knightes Tale" (Chaucer, 1927). La *Salvia* comune, *S. officinalis*, and Clary sage, *S. sclarea*, hanno avuto un lungo uso storico per le malattie (Grieve, 1971). *S. miltiorrhiza*, or *tan-shen*, è uno dei 5 rimedi astrali della medicina, tanto quanto lo *jen-shen* or ginseng (*Panax* spp.). Questa *Salvia* è reputata avere molte proprietà toniche nel *Pen T'sao*, pubblicato nel 1578 (Smith and Stuart, 1973), ed è riportata in un "A Barefoot Doctor's Manual" (Anon., 1974). Siri Altschul ha raccolto informazioni su un certo numero di *Salvia* medicinali nei campioni dell' Harvard Herbaria (Altschul, 1973) e Díaz lista 9 specie nell'uso medicinale in Mexico (Díaz, 1976).

Uso nella Divinazione

Durante le due sessioni con *S. divinorum*, gli investigatori notarono:

1. Varie sensazioni furono riportate dai soggetti mentre giacevano o stavano seduti tranquillamente nel buio. Queste includevano (la sensazione di) volare o fluttuare e viaggiare nello "spazio", il contorcersi o l'arrotolarsi (come il filo su un telaio), pesantezza e leggerezza del corpo e un senso di "dolore come un'ammaccatura."
2. Gli effetti fisici accompagnavano l'esperienza. Vi era un'intossicazione che provocava vertigini e mancanza di coordinazione nel tentativo di muoversi. La registrazione magnetica della seconda sessione rivelò una dizione biascicante e una certa difficoltà nel riuscire a formare le frasi. Díaz provò un rallentamento nelle pulsioni cardiache e sensazioni di freddo. Entrambi i soggetti ebbero una reazione normale delle pupille alla proiezione di luce negli occhi.
3. Anche se i soggetti erano consci delle sensazioni e dell'incoordinazione prodotta loro dall'infuso di *Salvia*, affermarono che la loro mente sembrava in uno stato d'acuta consapevolezza. L'esperienza non fu simile all'intossicazione alcolica.
4. Precedenti rapporti sull'ingestione di *S. divinorum* avevano messo l'accento sulla dolcezza degli effetti, e la brevità della loro durata. E' stato mostrato, in ogni caso, che date le debite condizioni di quiete e buio era possibile sperimentare effetti per ore. Le visioni prodotte furono velocemente dissolte dalla luce o dal rumore.
5. Sembra che vi sia un aspetto nell'intossicazione della *Salvia* che lascia la mente del soggetto in uno stato ricettivo. Questo è stato ben documentato durante la seconda sessione quando entrambi i soggetti parlavano abbastanza di continuo. Díaz iniziò descrivendo piante e fiori. Dopo aver finito di parlare Valdés iniziò con

una visione simile. Quando Díaz lamentò la sua incapacità nel vedere le figure religiose descritte dal *curandero*, apparentemente provocò Valdés, che ebbe quest'imagery per il resto della sessione e durante il viaggio in macchina. Appena Valdés descrisse un castello, anche Díaz iniziò a vederlo.

Il figlio di Don Alejandro tradusse la spiegazione dello sciamano sul modo in cui *S. divinorum* agiva negli esseri umani.

Quello che succede al *i-nyi-ma-no* (l'anima, il cuore, o la vita, tutti e tre i concetti sono contenuti in una sola parola Mazateca) quando si beve la *María* è che *María* ha così tanto liquore (*licor*) che accade come una specie di mancamento/svenimento. Per questa ragione una persona diventa ebbra (*borracho*) quando viene a far parte di *María*, la preghiera che recita mio padre e, anche, le parole di Cristo. Ma non è vero liquore, ti dico, tu entri in uno stato "delicato" (*delicado vayas*). Non preoccuparti, non preoccuparti di quello che succede al tuo *i-nyi-ma-no*; qualcosa succede, ma è piccola e poco importante. A volte chi prende la *María* diventa mezzo-ubriaco, ma con il risultato che ciò che si sta prendendo rimarrà impresso nella mente.

Tra i guaritori Mazatechi che usano le tre piante divinatorie (i funghi, i semi di morning glory e la Salvia), *S. divinorum* è la prima ad essere usata nel training sciamanico. Leary e Alpert sono stati accreditati per essere stati i primi a scoprire l'importanza di quello che hanno chiamato **set** ("l'aspettativa che una persona ha riguardo ciò che la droga gli farà provare ") and **setting** ("l'ambiente, sia fisico che sociale, in cui viene presa una droga ") per le esperienze di un individuo durante l'influenza di un allucinogeno (Weil, 1972). Nelle culture tradizionali, come quella dei Mazatecs, lo scopo delle piante come *ska María Pastora* è di indurre le visioni, mentre gli sciamani come Don Alejandro, padroneggiano la manipolazione del set e settino per raggiungere tale scopo. Anche se è definito soltanto debolmente psicotropo, l'infuso di Salvia susciterà potenti visioni, nelle appropriate condizioni. Due preghiere rituali, che innalzano il mistero di ciò che sta per accadere, sono recitate sul soggetto o sull'apprendista, che poi prende la *María* con lo stesso *curandero*. Mentre lo sciamano rivela le sue visioni nell'oscurità silenziosa, il soggetto (la cui mente è in uno stato ricettivo per via della *María* e dei settings cerimoniali) è in grado di "vederle" anche lui. L'avere una persona sobria a controllare la sessione renderà palese ogni difficoltà incipiente, e se l'esperienza prendesse una piega troppo terrificante, sarà possibile porvi termine velocemente con qualche parola oppure accendendo una luce. Padroneggiare la *S. divinorum* e imparare a usare i semi di morning glory prima di impiegare i funghi, probabilmente rende l'apprendistato meno traumatico di quanto potrebbe essere se si usassero soltanto i funghi, mentre contribuisce a dare al futuro sciamano illuminazioni più profonde riguardo alla varietà delle esperienze allucinogene.

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**Divinorin A, a Psychotropic Terpenoid, and Divinorin B from the Hallucinogenic Mexican Mint,
*Salvia divinorum***

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While nonalkaloidal constituents have been implicated as being at least partially responsible for the biological activity of several hallucinogenic plants,² little has been reported on the structure of such possible hallucinogens. The Mexican labiate *Salvia divinorum* (Epling and Jatíva-M.) is used in divinatory rites by the Mazatec Indians of Oaxaca, Mexico. An infusion prepared from the crushed fresh leaves of this plant (known locally as *ska Maria Pastora*) is used to induce "visions" and its psychotropic effects have been verified by a number of researchers.³ Furthermore, upon administration of large doses of the plant extract in animals, one observes behavioral patterns that resemble the "intoxication" the infusion produces in human beings. Despite previous investigations, the principle(s) responsible for this biological activity has never been identified.⁴ We now report the isolation and the structures of the new neoclerodane diterpenes, divinorins A and B from *S. divinorum*. Divinorin A, the first clearly documented terpenoid,⁵ exerts a sedative effect on mice when tested in a bioassay based on a modification of Hall's open field.⁶

Lyophilized, pulverized leaves (5.35 kg) of *S. divinorum* were extracted with ether. The nonpolar components were removed from the concentrated extract through partition between hexanes and 90% aqueous methanol. The dried methanolic fraction was crudely purified by silica gel flash column chromatography⁷ (hexanes-ethyl acetate 2/1). Further purification of the biologically active fractions by additional silica gel flash column chromatography (methylene chloride-methanol 20/1) followed by repeated recrystallization yielded pure divinorin A (**1**) (1.2 g) and B (**3**) 50mg.

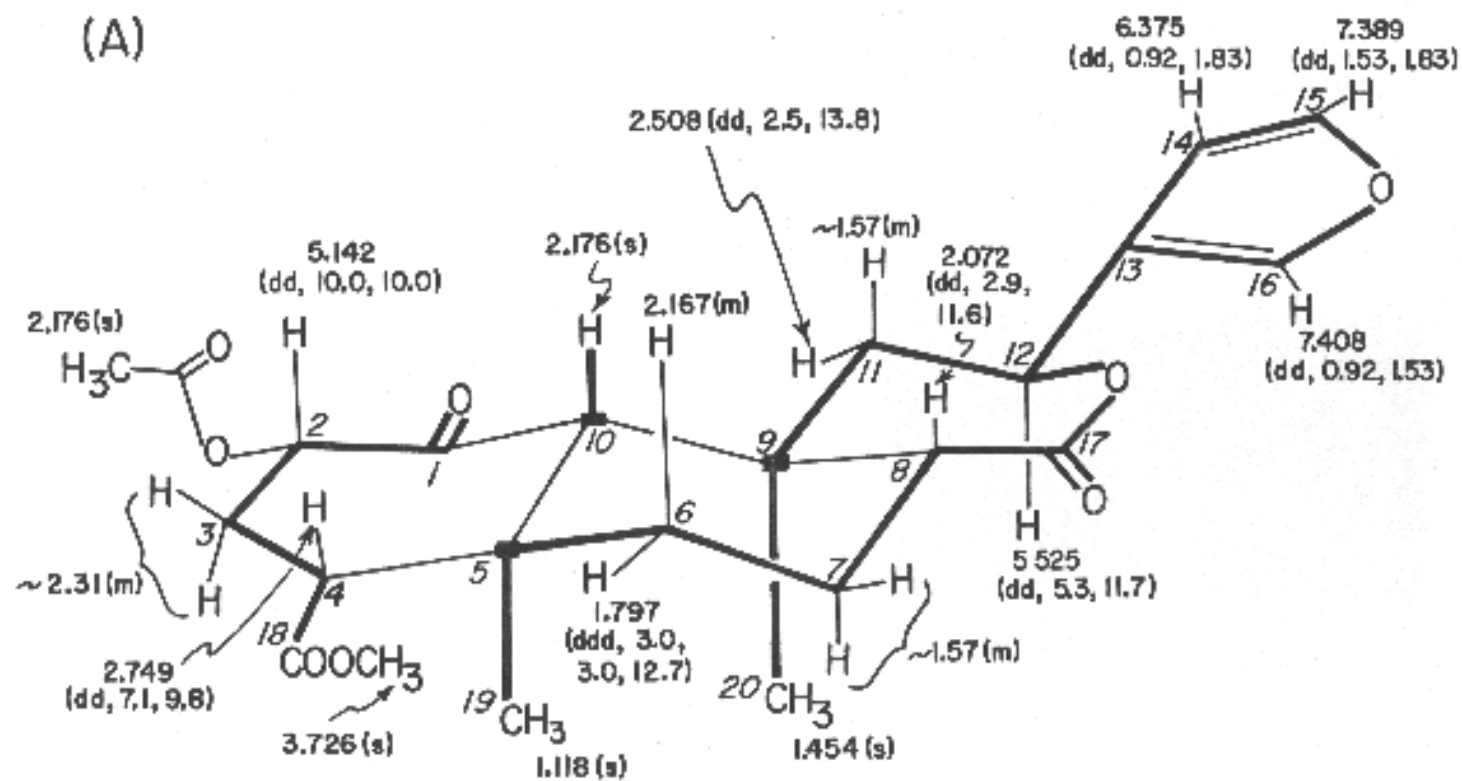
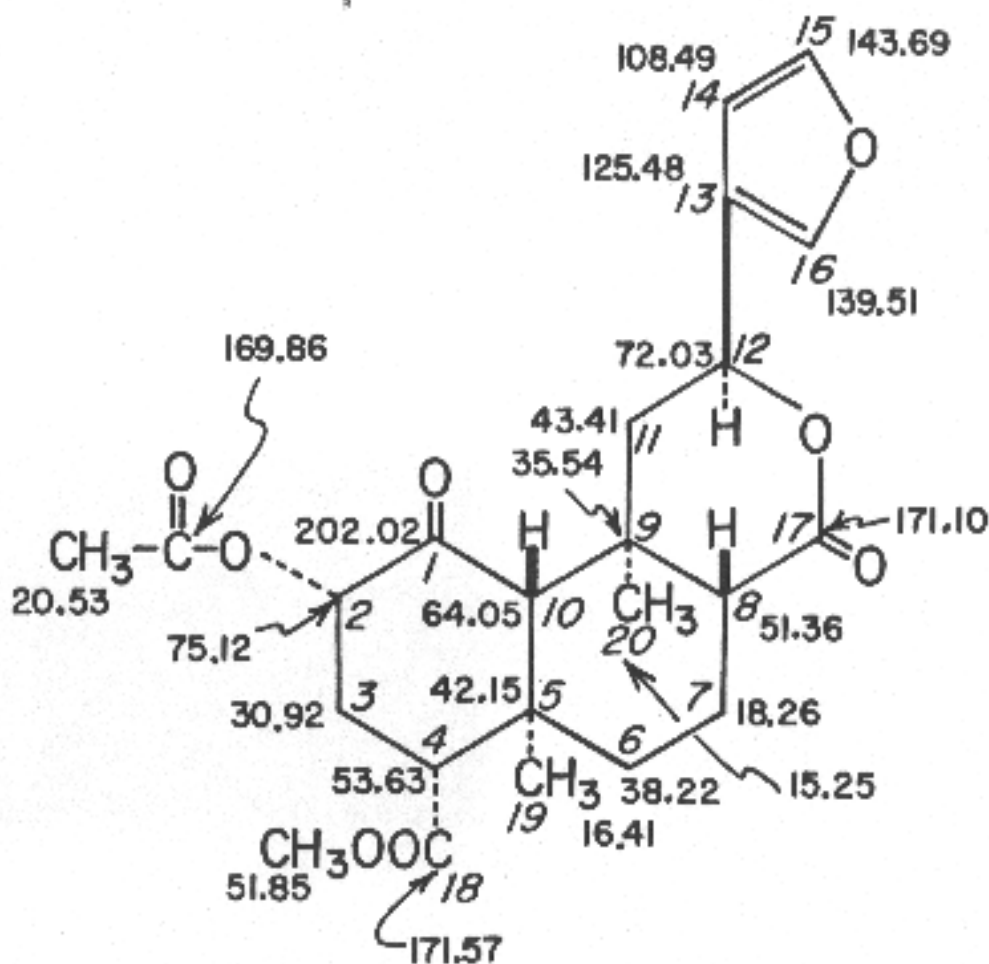


Figure 1. Divinorin a (1): (A) 360-MHz ^1H NMR data in CDCl_3 , δ values from $(\text{CH}_3)_4\text{Si}$ [multiplicity and J values (in Hz) in parentheses];

(B)



(B) 90.56-MHz ^{13}C NMR data in CDCl_3 , δ values from $(\text{CH}_3)_4\text{Si}$; assignments are based on off-resonance, selective, and gated decoupling experiments and chemical shift comparisons with compounds 2-4 and model compounds.

Divinorin A (**1**), mp 242-244 °C, $[\alpha]^{22}_{\text{D}} -45.3^\circ$ (c 8.530, CHCl_3), had the molecular formula $\text{C}_{23}\text{H}_{28}\text{O}_8$. The UV spectrum (211nm (ϵ 5260)) was indicative of the presence of the furan moiety. This was further corroborated by the products from the hydrogenation reaction of divinorin A which was accompanied by hydrogenolysis at C-12. Thus, catalytic hydrogenation of divinorin A in methanol over 5% Pd/C provided quantitatively a stereoisomeric mixture (at C-13) of hexahydro derivatives **4**. Although it was difficult to determine the presence of a ketone group from the IR spectrum of divinorin A alone, as its carbonyl region is strongly absorbed due to the presence of three other carbonyl functionalities, the presence of a highly hindered ketone group in divinorin A became evident from the results of its sodium borohydride reduction. The sodium borohydride reduction of divinorin A was found to be extremely sluggish at room temperature, presumably due to the severe steric crowding near the ketone located at C-1. However reduction at higher temperatures produced the mixture of **2** (40%) and its stereoisomeric diol (40%). The latter appears to be stereoisomeric at C-8 and/or C-9, which evidently has resulted from its "base promoted" C-8/C-9 cleavage followed by reclosure prior to the reduction. The stereochemistry of the diol **2** was secured as identical with that of divinorin A by its conversion to the later via acetylation with acetic

anhydride/pyridine, at room temperature, followed by oxidation with pyridinium chlorochromate. In contrast, the same sequence of the reactions of the other diol gave a thus far undetermined stereoisomer of divinorin A.

Both ^1H and ^{13}C NMR spectra were particularly informative since all ^1H and ^{13}C signals could be observed and assigned through extensive proton decoupling, off-resonance decoupling, and selective decoupling experiments. These provided partial structures which are indicated in connecting thick lines and by solid blocks denoting quaternary carbons in Figure 1A. The linkage between C-1 and C-10 was ascertained from the ^1H NMR spectrum in acetone- d_6 of the diol **2**, mp 218-220 °C, obtained in 40% yield from divinorin A with sodium borohydride in isopropyl alcohol at 35 °C for 2.5 h. Thus, inspection of the coupling constants, involving protons at C-10, C-1, and C-2 ($J_{10\beta, 1\beta} = 2.0$ Hz, $J_{1\beta, 2\beta} = 2.1$ Hz, $J_{2\beta, 3\beta} = 4.9$ Hz, $J_{2\beta, 3\alpha} = 11.4$ Hz, $J_{3\beta, 4\beta} = 2.1$ Hz, and $J_{3\alpha, 4\beta} = 13.2$ Hz) led to the proposed structure for divinorin A.

The structure was finally confirmed by a single-crystal X-ray diffraction experiment. A perspective drawing of the final X-ray model, less hydrogen atoms, is shown in Figure 2. Details of the X-ray analysis are given in the Experimental Section and bond lengths, angles, other crystallographic parameters are provided in supplementary information.

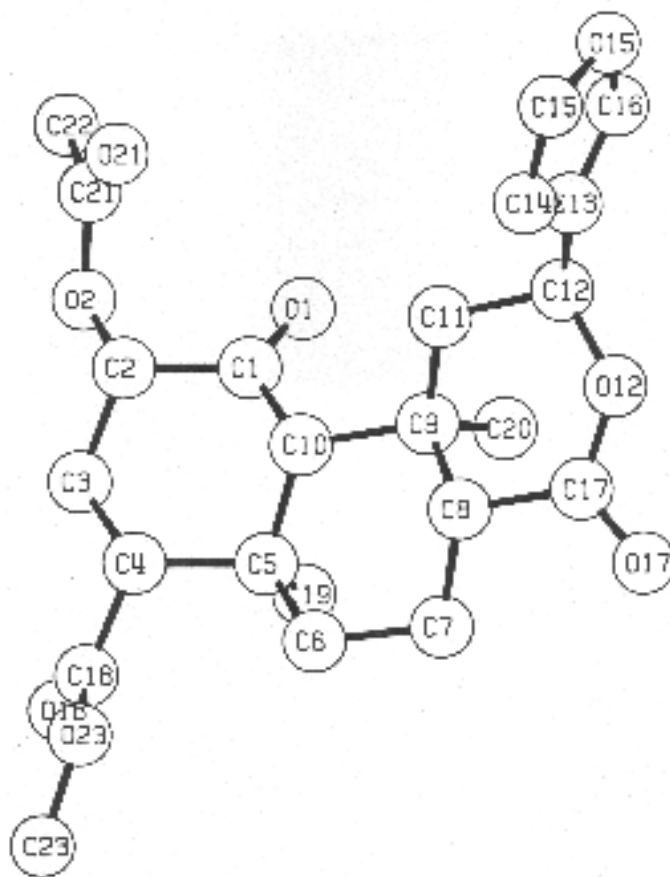
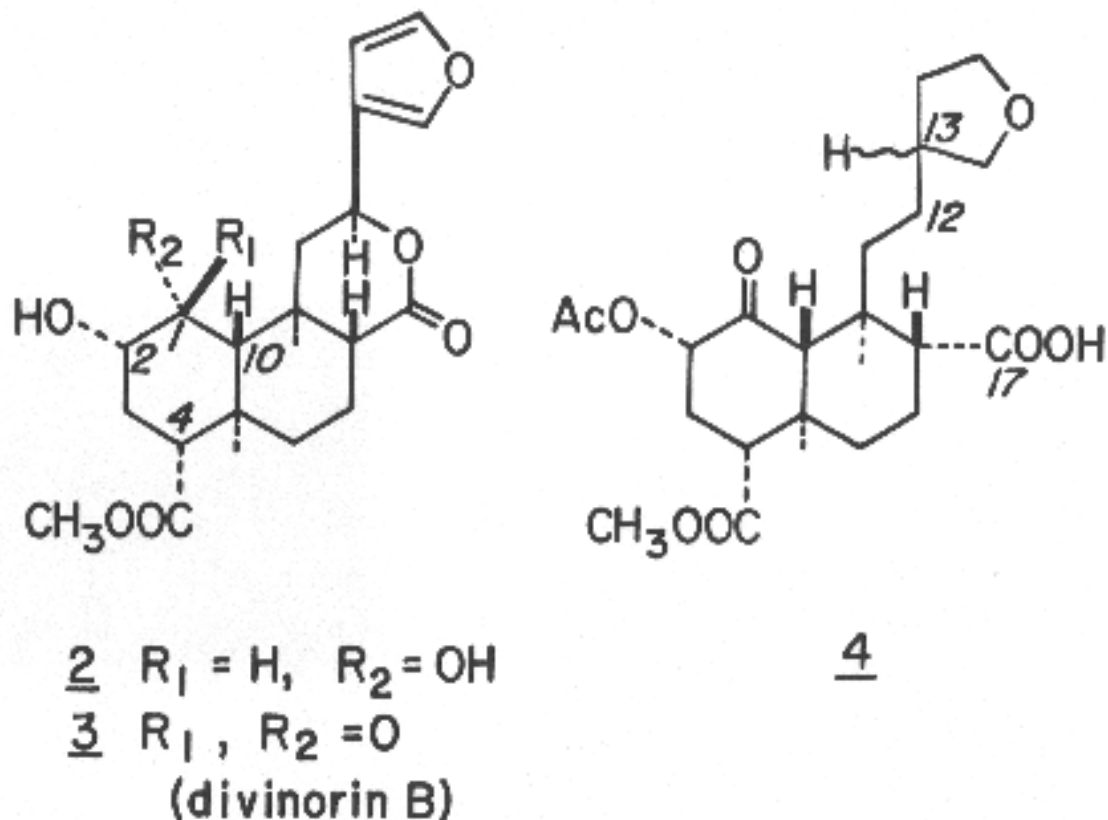


Figure 2. Computer-generated perspective drawing of divinorin A (**1**) with crystallographic numbering scheme.



Divinorin B (**3**), mp 213-216 °C, $[\alpha]^{22}_D -3.39^\circ$ (c 0.441, EtOH), was found to be desacetyl divinorin A, which was verified by the conversion into divinorin A via acetylation with acetic anhydride in pyridine. The absolute configurations are proposed based on the CD spectra (MeOH) of divinorins A (**1**) ($\Delta\epsilon_{294} -2.63$) and B (**3**) ($\Delta\epsilon_{290} -1.41$) and hexahydrodivinorin A (**4**) ($\Delta\epsilon_{295} -1.67$). While the absolute configurations shown appear to be corroborated by the negative $n \rightarrow \pi^*$ Cotton effect of isofruticolone,⁹ the unambiguous assignment of the divinorins is yet to be made.

Experimental Section

Microanalysis was performed by Spang Microanalytical Laboratory, Eagle Harbor, MI. Melting points were taken on a Fisher Johns melting point apparatus and are uncorrected. The Ultraviolet spectrum was determined on a Hewlett-Packard 8450A UV/vis spectrophotometer. Infrared spectra were recorded on a Perkin-Elmer Model 281 spectrometer as potassium bromide (KBr) discs. Mass spectra were taken with a Finnigan Model 4023 GC/MS spectrometer. Nuclear magnetic resonance spectra were obtained on a Bruker WM360 spectrometer (360 MHz for ^1H and 90.56 MHz for ^{13}C) in $CDCl_3$ unless otherwise stated and all chemical shifts are reported in parts per million relative to internal tetramethylsilane. Optical rotations were determined on a Perkin-Elmer 241 polarimeter using a quartz cell of 10-cm length and 1-mL volume. Circular dichroism spectra were recorded on a JASCO J-40A automatic recording spectropolarimeter using a quartz cell of 20-mm length and 3.5-mL volume.

Collection, Extraction, and Isolation. Live specimens of *S. divinorum* were collected at Cerro Quemado (Sept. 3, 1979) and Cerro Rabon (March 7, 1980) in Oaxaca, Mexico. The plants were cultivated at the

Matthaei Botanical Gardens, The University of Michigan, in order to provide material for research.

Fresh *Salvia* leaves (5.350 kg) were lyophilized and forced through 7- and 16-mesh screens yielding 674.1 g of powdered dry material. The powder was extracted in 30-40-g lots for 24 h with ethyl ether (1 L/lot) using a Soxhlet apparatus and dried in vacuo, giving a total of 27.51 g of ether extract. The extract was partitioned between hexanes (600 mL) and 90 % aqueous methanol (600 mL) for 48 h using a liquid/liquid extractor and yielded, after removal of the solvent in vacuo, a 7.41-g methanol fraction. The hexane fraction was repartitioned as above and the combined concentrated methanol fractions (9.36 g) were subjected to further purification by flash column chromatography.

In a typical experiment, a Fischer Porter 2.5 x 25 cm column containing 55 g of silica gel (70-230 mesh) which had been treated with 2.75 mL of water, was equilibrated with the eluting solvent, hexanes/ethyl acetate (2/1). Five hundred milligrams of the methanolic fraction was adsorbed on 5 g of silica gel and carefully poured on the preequilibrated column. The eluting solvent was then forced (using nitrogen pressure) through the column at the flow rate of 25-35 mL/min and 100 mL fractions were collected. Each fraction was then followed by bioassay and fractions 4-9 were determined to be active. The 9.36 g of methanolic fraction yielded 2.349 g of desired crude material. The material recovered was further purified by using another flash column chromatography. Five hundred milligrams of the crudely purified methanol fraction, adsorbed on 5 g of silica gel, was added to the top of the 2.5 x 25 cm Fischer Porter column containing 55 g of silica gel which had been treated with 2.75 mL of water and preequilibrated with the eluting solvent, methylene chloride/methanol (20/1). The column was eluted at a rate of 25-35 mL/min with the aid of 5 psi of nitrogen pressure, and 25 mL fractions were collected. The biologically active fractions (fractions 3-5) were combined. The 2.349 g of starting material gave 1.515 g of impure diterpene mixture from which pure divinorin A (893 mg) was obtained after two recrystallizations from absolute ethanol. The combined mother liquors were subjected to preparative TLC purification (Merck GF-254, 15 x 1 mm plate, 20 x 20 cm, developed with CHCl₃/MeOH/H₂O, 100.10/1), which gave more divinorin A (305 mg, *R_f* 0.63) and crude divinorin B. The crude divinorin B was further purified by two recrystallizations from methanol, yielding 50 mg of divinorin B (*R_f* 0.48). **Divinorin A (1):** 242-244 °C; [α]²²_D -45.3° (*c* 8.530, CHCl₃); UV (MeOH) 211 nm (ϵ 5260); IR (KBr) 3220, 1745, 1735, 1240, 875 cm⁻¹; NMR (¹H and ¹³C) see Figure 1; mass spectrum (EI, 70 eV), *m/z* 432 (*M*⁺, 1.5), 273 (6.5), 166 (8.6), 121 (13.0), 108 (8.0), 107 (9.7), 95 (17.9), 94 (100), 93 (9.9), 91 (6.9), 81 (11.2), 79 (5.5), 55 (13.7); CD (MeOH) $\Delta\epsilon_{294}$ -2.63; Anal. Calcd for C₂₃H₂₈O₈: C, 63.89; H, 6.48; O, 29.63. Found: C, 63.44; H, 6.61; O, 30.14. **Divinorin B (3):** mp 213-216 °C; [α]²⁴_D -3.39° (*c* 0.441, EtOH); IR (KBr) 3495, 3140, 1735, 1715, 1250, 860 cm⁻¹; ¹H NMR (360 MHz) δ 1.101 (s, 3 H, 19-H), 1.484 (s, 3 H, 20-H), 1.50-1.65 (m, 3 H, 7-H's and 11 β -H), 1.797 (ddd, 1 H, *J* = 2.7, 3.1, 12.9 Hz, 6 α -H), 2.020 (ddd, 1 H, *J* = 11.4, 13.5, 13.6 Hz, 3 α -H), 2.074 (dd, 1 H, *J* = 2.0, 11.7 Hz, 8-H); 2.169 (s, 1 H, 10-H); 2.17 (m, 1 H, 6 β -H); 2.480 (ddd, 1 H, *J* = 3.1, 7.7, 13.6 Hz, 3 β -H); 2.548 (dd, 1 H, *J* = 5.2, 13.4 Hz, 11 α -H); 2.709 (dd, 1 H, *J* = 3.1, 13.5 Hz, 4-H); 3.599 (d, 1 H, *J* = 3.3 Hz, OH); 3.717 (s, 3 H, COOMe); 4.080 (ddd, 1 H, *J* = 3.3, 7.7, 11.4 Hz, 2-H); 5.567 (dd, 1 H, *J* = 5.1, 11.7 Hz, 12-H); 6.376 (dd, 1 H, *J* = 0.92, 1.8 Hz, 14-H); 7.399 (dd, 1 H, *J* = 1.5, 1.8 Hz, 15-H); 7.416 (dd, 1H, *J* = 0.92, 1.5 Hz, 16-H); ¹³C NMR (C₅D₅N; 90.56 MHz); δ 15.35 (q), 16.49 (q), 18.89 (t), 35.82 (t), 38.31 (s), 42.44 (s), 43.53 (t), 51.22 (d), 51.51 (q), 53.62 (d), 63.18 (d), 71.99 (d), 75.27 (d), 109.31 (d), 126.64 (s), 140.26 (d), 144.15 (d), 171.38 (s), 172.59 (s), 209.79 (s) ppm;

CD (MeOH) $\Delta\epsilon_{290}$ -1.41.

Hexahydrodivinorin A (4). A mixture of 150 mg of divinorin A (**1**) in 100 mL of methanol and 162 mg of 5% palladium on charcoal in a 125 mL round bottomed flask was hydrogenated at room temperature under a slightly positive pressure for 24 h. The catalyst was removed by filtration and the solvent removed in vacuo. The residual oil was dissolved in 25 mL of methylene chloride and extracted 3 times with 5-mL portions of 1 % NaHCO_3 in H_2O . the combined aqueous layers were acidified to pH 1.0 with concentrated HCl and extracted 3 times with 5-mL portions of methylene chloride. The organic fraction was taken to dryness in vacuo and the crude oily product was recrystallized from ethanol-water to provide pure hexahydrodivinorin A (**4**) (143 mg): mp 196-198 °C; IR (KBr) 3100, 1755, 1735, 1725, 1225 cm^{-1} ; ^1H NMR (360MHz) δ 1.033 (s, 3 H), 1.340 and 1.345 (both s, total 3 H), 2.137 and 2.139 (both s, total 3 H), 3.686 (s, 3 H); ^{13}C NMR (90.56 MHz) δ 15.99 (q), 19.71/19.74* (q), 20.48 (q), 21.26 (t), 27.19/27.27* (t), 31.33 (t), 32.10/32.22* (t), 38.10 and 38.29 (multiplicities not certain due to overlap), 38.19 (s), 38.37 (t), 39.56/39.63* (d), 42.91/42.92* (s), 49.05*/49.08 (d), 51.71 (q), 54.02*/54.15 (d), 58.67*/58.79 (d), 67.84 (t), 73.31*/73.37 (t), 75.44*/75.45 (d), 169.61 (s), 171.65 (s), 177.26*/177.49 (s), 202.08/202.10* (s) (the paired chemical shifts represent those of spectroscopically resolved diastereomers, and the ones with asterisks indicate the more intense ^{13}C peaks between the two paired); mass spectrum (CI; CH_4) m/z (relative intensity) 467 (12), 440 (22), 439 ($\text{M} + \text{H}^+$, 100), 437 (11), 422 (15), 421 (68), 167 (6), 104 (17), 99 (8), 97 (6), 95 (7), 85 (9); CD (MeOH) $\Delta\epsilon_{295}$ -1.67.

Sodium Borohydride Reduction of Divinorin A. Divinorin A (**1**, 260mg) was dissolved in 120 mL of isopropyl alcohol in a 200-mL round bottomed flask and was treated with 14 mg of sodium borohydride. The mixture was warmed up to 33-35 °C and was kept at that temperature for 2.5 h. The reaction was terminated by addition of 3 mL of methanol. The solvent was removed under vacuum and the dried crude products were re-dissolved in 50 mL of chloroform and washed with 50 mL of 1 % HCl and twice with 50 mL portions of water. The organic fraction was dried over sodium sulfate and taken to dryness (255 mg). The crude mixture was purified through flash column chromatography on silica gel (230-400 mesh; 30 g) using hexanes/ethyl acetate (1/2) as the eluting solvents. The more polar diol (**2**; 124 mg) was recovered along with the less polar, thus far unidentified stereoisomeric diol (120 mg; mp 234-235 °C). **Diol 2**: mp 218-220 °C; $[\alpha]_D^{25} +1.16^\circ$ (c 1.55, EtOH); IR (KBr) 3505, 1725, 1705 cm^{-1} ; ^1H NMR (acetone- d_6 , 360 MHz) δ 1.163 (s, 1 H 10-H), 1.375 (s, 3 H), 1.438 (s, 3 H), 1.56-1.62 (m, 4 H, 3 β -H, 6-H's, and 7 α -H), 1.799 (dd, 1 H, J = 11.9, 13.2 Hz, 11 β -H), 1.964 (dddd, 1 H, J = 3.3, 3.3, 3.5, 13.8 Hz, 7 β -H), 2.109 (ddd, 1 H, J = 11.4, 12.7, 13.2 Hz, 3 α -H), 2.203 (dd, 1 H, J = 2.1, 13.2 Hz, 4-H), 2.294 (dd, 1 H, J = 3.3, 12.3 Hz, 8-H), 2.494 (dd, 1 H, J = 5.6, 13.2 Hz, 11 α -H), 3.358 (br s, 1 H, 1-OH), 3.553 (dddd, 1 H, J = 2.0, 4.9, 5.4, 11.4 Hz, 2-H), 3.623 (s, 3 H, COOMe), 4.027 (d, 1 H, J = 5.4 Hz, 2-OH), 4.207 (br s, 1 H, 1-H), 5.594 (dd, 1 H, J = 5.6, 11.9 Hz, 12-H), 6.593 (dd, 1 H, J = 0.7, 1.8 Hz, 14-H), 7.556 (dd, 1 H, J = 1.6, 1.8 Hz, 15-H), 7.650 (dd, 1 H, J = 0.7, 1.6 Hz, 16-H); ^{13}C NMR (acetone- d_6 , 90.56 MHz) δ 17.02 (q), 18.07 (q), 19.71 (t), 29.39 (t), 37.39 (s), 38.50 (s), 41.22 (t), 44.75 (t), 51.24 (q), 52.79 (d), 55.81 (d), 56.05 (d), 69.69 (d), 72.12 (d), 72.33 (d), 109.70 (d), 127.74 (s), 140.62 (d), 144.52 (d), 172.12 (s), 173.75 (s); mass spectrum (CI; CH_4) m/z (relative intensity) 421 (7), 394 (21), 393 ($\text{M} + \text{H}^+$, 100), 375 (74), 357 (78), 343 (87).

Conversion of Diol 2 to Divinorin A (1). The diol **2** (25mg) was dissolved in 7 mL of dry pyridine, placed in a 25-mL round bottomed flask, and treated with 1 mL of acetic anhydride. After being stirred at room temperature for 5 h, the reaction was terminated by addition of 1 mL of methanol. The mixture was poured into ice water (50mL), its pH was adjusted to ~10 by addition of aqueous NH_4OH and it was extracted twice with 60 mL portions of chloroform. The combined organic layers were washed with 25 mL of 10 % aqueous HCl and then 25 mL of water, dried over sodium sulfate, and evaporated in vacuo. The crude mixture (35 mg) was purified via flash column chromatography (50 g of 230-400 mesh silica gel; eluted with hexanes/ethyl acetate (1/1), providing 21 mg of the diol (**2**) 2-monoacetate along with 2 mg of the starting diol **2**. **Diol (2) 2-monoacetate:** IR (KBr) 3600, 1740, 1735, 1240 cm^{-1} ; ^1H NMR (360 MHz) δ 1.002 (s, 1 H, 10-H), 1.390 (s, 3 H), 1.458 (s, 3 H), 2.096 (s, 3 H, OAc), 3.677 (s, 3 H, COOMe), 4.292 (br s, 1 H, 1-H), 4.696 (ddd, 1 H, $J = 3.2, 4.6, 11.7$ Hz, 3-H); ^{13}C NMR (90.56 MHz) δ 16.81, 17.90, 18.72, 21.07, 24.90, 36.96, 37.87, 40.66, 51.43, 52.58, 55.00, 55.88, 67.36, 71.75, 74.60, 108.47, 125.91, 139.39, 143.78, 169.61, 171.68, 172.44.

The diol (**2**) 2-monoacetate (19 mg), dissolved in 5 mL of methylene chloride, was placed in a 25-mL round bottomed flask and treated with 53 mg of PCC in 5 mL of methylene chloride at room temperature. After 30 h, the reaction mixture was diluted with 50 mL of ether. The ether layer was recovered by decantation and the dark residue was extracted with 10 mL of ether. The combined ether layers were dried over sodium sulfate and the organic solvents removed in vacuo. The crude reaction products (20 mg) were purified via flash column chromatography [55 g of Merk silica gel, 230-400 mesh; eluted with hexane/EtOAc (3/2)] which yielded 10 mg of divinorin A (**1**) and 5 mg of diol (**2**) 2-monoacetate.

Acetylation of Divinorin B (3). Divinorin B (10 mg) dissolved in 5 mL of dry pyridine and placed in a 10-mL round bottomed flask, was treated with 0.5 mL of acetic anhydride at room temperature. The mixture was stirred for 6 h at that temperature. The reaction was terminated by addition of 1 mL of methanol and the mixture was poured into ice water (50 mL). The resulting precipitates were collected by filtration, washed thoroughly with water and dried in vacuo. The crude product was recrystallized from absolute ethanol and found identical with divinorin A.

X-ray Crystallographic Analysis of Divinorin A (1). Crystals of divinorin A were obtained by slow cooling of a saturated ethanolic solution. A crystal of dimensions 0.078 x 0.269 x 0.418 mm was mounted on a Syntex P2₁ diffractometer and found to have the space group $P2_12_12_1$ with $a = 6.369$ (2) Å, $b = 11.366$ (4) Å, and $c = 30.747$ (12) Å. The density was calculated to be 1.29g/cc for $Z = 4$. Intensity data were obtained using Mo $\text{K}\alpha$ radiation monochromatized by means of a graphite crystal whose diffraction vector was perpendicular to the diffraction vector of the sample. A total of 2494 reflections with $2\theta < 50^\circ$ were measured, of which 1376 were considered observed [$I > 3\sigma(I)$]. The data were reduced by procedures previously used.¹⁰ The structure was solved using MULTAN78. Hydrogen atomic positions were calculated and added to the structure. They were given isotropic temperature factors one unit greater than the atom to which they were attached and their positions were not refined. Standard techniques were used to refine the structure to $R_1 = 0.087$ and $R_2 = 0.092$.

Note Added in Proof. After the original submission of the manuscript we learned that Ortega et al. reported the structure of salvinorin which is identical with that of divinorin A described herein (Ortega,

A.; Blount, J.F.; Manchand, P.S. *J. Chem. Soc., Perkin Trans. I* **1982**, 2505). Therefore divinorins A and B should be called salvinorins A and B respectively.

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Registry No. **1** 837-29-01-5; **2** 92545-29-4; **3** 92545-30-7; **4** 92545-31-8.

Supplementary Material Available: (X-ray Crystallographic ordering data was not copied - Arachnid).

1. Address correspondence to this author at the Department of Chemistry.
2. (a) Schultes, R.E.; Hofmann, A. "The Botany and Chemistry of Hallucinogens", Charles C. Thomas, Publisher: Springfield, IL, 1980, 2nd ed. (b) Lewis, W.H.; Elvin-Lewis, M.P.F. in "Medical Botany", Wiley; New York, 1977; Chapter 18. (c) Díaz, J.L. *Ann. Rev. Pharmacol. Toxicol.* **1977**, 17, 647.
3. (a) Wasson, R.G. *Bot. Mus. Leaflet*, Harvard Univ., **1962**, 20, 77. (b) Hofmann, A. "LSD; My Problem Child"; McGraw-Hill; New York, 1980; pp. 127-144. (c) Valdes, L.J.; Diaz, J.L.; Paul, A.G. *J. Ethnopharmacol.* **1983**, 7, 287.
4. (a) Hofmann, A. *Planta Medica* **1964**, 12, 341. (b) Diaz, J.L. in "Etnofarmacologia de Plantas Alucinoginas Latinoamericanas"; Diaz, J.L., Ed.; Centro Mexicano de Estudios en Farmaco-dependencia: Mexico City, 1975, pp. 149-152. Although it was reported that active fractions reacted with Ludy Tenger reagent (a modified Dragendorff's reagent) and possibly alkaloids, extensive work in our laboratory has shown that pharmacologically active extracts from *S. divinorum* do not contain alkaloids, nor were we able to isolate any alkaloids from the plant itself.
5. Infusions and tinctures of the green matter from *Lagochilus inebrians* Bge. are described as having pharmacological activity exhibited by hemostatic and sedative properties of a general nature that are in part attributed to the spiro ether-containing labdane, lagochilin, which as been isolated from the plant. However, details regarding the preparations and the diterpene itself are not available: (a) Abramov, M.M.; Yaparova, S.A. *J. Appl. Chem., USSR* **1963**, 36, 2471. (b) Chizhov, O.S.; Kessenikh, A.V.; Yakolev, I.P.; Zolatorev, B.M.; Petukhov, V.A. *Tetrahedron Lett.* **1969**, 1361.
6. Brimblecombe, R.W.; Green, A.L. *Nature (London)* **1962**, 194, 983. The following is a summary of our modified bioassay: Mice were dosed with various fractions of the extract and the animals' activities were observed in the field, which consisted of a 3-ft. circle divided into squares. Parameters measured were the number of squares entered (lines crossed), rearings on the hind legs, and time spent immobile. Divinorin A reduced all three measurements of activity, resembling that of *S. divinorum* in human beings.^{2c}

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8. Purified, recrystallized divinorin A has activity slightly stronger than the original plant extract, whereas divinorin B was inactive in this bioassay (this does not preclude the possibility of a different psychotropic activity in the latter). The mother liquor from recrystallization contains at least two more terpenoids in addition to these two divinorins. This mixture shows substantially stronger activity, thus suggesting the presence of a minor component(s) that either synergistically enhances the activity of divinorin A or has strong sedative properties in itself. Isolation of these minor components and identifying their activities is currently being pursued.
9. Martinez-Ripoli, M.; Fayos, J.; Rodriguez, B.; Garcia-Alvarez, M.C.; Savona, G.; Piozzi, F.; Paternostro, M.; Hanson, J.R. *J. Chem. Soc., Perkin Trans. I* **1981**, 1186.
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Loliolide from *Salvia divinorum*

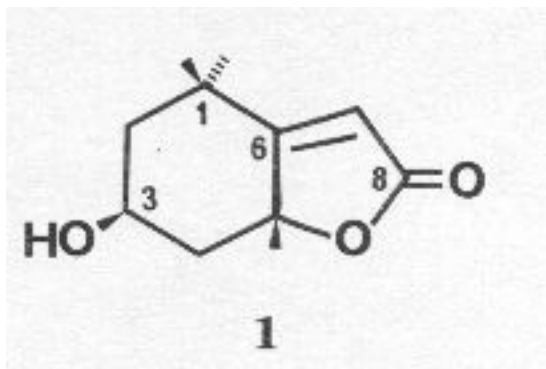
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Journal of Natural Products (1986) **49**: 171.

As part of our investigations (1,2) of the psychotropic Mexican labiate, *Salvia divinorum* Epling & Játiva-M., we report the presence of loliolide (**1**), previously isolated from *Lolium perenne* (3), Gramineae, *Digitalis purpurea* L. (4), Scrophulariaceae, and several other species (5). The compound has recently been described to be a potent ant-repellent (8).



EXPERIMENTAL

PLANT MATERIAL. - *S. divinorum* was cultivated by the author at home and at the Matthaei Botanical Gardens. Voucher specimens have been deposited at the University of Michigan Herbarium.

EXTRACTION AND ISOLATION. - Air dried foliage (3.4 kg) of *S. divinorum* was extracted with Et₂O using a Soxhlet apparatus. Repeated flash column and high pressure liquid chromatographic separations led to isolation of 15 mg of loliolide, mp 154-155° C (lit. 149-153°C). The compound was characterized by comparison of its mp, ir, ¹H-nmr, ms, [α]_D and uv to published values (3-7). The structure of loliolide was further corroborated by its partially and completely decoupled ¹³C-nmr spectra (CDCl₃), δ 26.58 and 27.07 (both q, C-1 CH₃), 30.66 (q, C-5 CH₃), 35.89 (s, C-1), 45.75 and 47.43 (both t, C-2 and C-4), 66.84 (d, C-3), 86.60 (s, C-5), 112.97 (d, C-7), 171.75 (s, C-6), 182.33 (s, C-8). Full details of isolation and identification are available from the author.

ACKNOWLEDGEMENTS

Research on *S. divinorum* has been funded in part by grants from the College of Pharmacy, the University of Michigan and an NIH research grant awarded to Dr. Masato Koreeda of this department. The NIH, NSF and University of Michigan contributed to the purchases of Bruker WM-360 nmr, Nicolet 60SX gc/ftir and Finnigan gc/ms spectrometers.

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EXPERIMENTAL DETAILS OF LOLIOLIDE ISOLATION

GENERAL EXPERIMENTAL PROCEDURES

Salvia divinorum was grown at the author's home and at the Matthaei Botanical Gardens. Voucher specimens have been deposited at the University Herbarium. Air-dried leaves (3.4 kg) were finely ground and extracted with ether using a Soxhlet apparatus. The ethereal extract was dried *in vacuo* and partitioned between water and ethyl acetate. The organic fraction weighed 112 g after drying. Preliminary separations of the organic fraction were accomplished by using gradient-elution flash column chromatography (2) on 10 g portions of the fraction (5 x 15 cm columns of silica gel 60, 230-400 mesh) with hexane/EtOAc as the solvent system. Further purifications were performed using gradient-elution flash column chromatography on 2.5 x 15 cm columns of silica gel 60 (230-400 mesh) with hexane/EtOAc and CH₂Cl₂/MeOH solvent systems. Preparative hplc separations were performed using a Waters Liquid Chromatograph system (Models U6K injector, M45 solvent delivery system, R400 differential refractometer, and 440 absorbance detector) attached to a microporasil P/N 27477 S/N column (fitted with a C-18 Corasil prefilter) and Houston OmniScribe B-5000 chart recorder.

Melting points were taken uncorrected on a Thermolyne HP-12615 melting point apparatus. Infrared spectra were recorded on a Nicolet Model 60SX GC/FTIR Spectrometer as potassium bromide (KBr) discs. Chemical ionization (NH₃ gas) mass spectra were taken with a Finnigan Model 4023 GC/MS spectrometer. Nuclear magnetic resonance spectra were obtained on a Bruker WM360 spectrometer (360 MHz for ¹H and 90.56 MHz for ¹³C) in CDCl₃ and all chemical shifts are reported in parts per 1 million relative to internal tetramethylsilane. Ultraviolet spectra were taken using a Beckman Model 25 Spectrophotometer. Optical rotations were determined on a Perkin-Elmer 241 polarimeter using a quartz cell of 10 cm length and 1 ml volume.

LOLIOLIDE (**1**). Preparative HPLC (hexane/Et₂O 1:1) of a 57 mg fraction of *S. divinorum* extract led to isolation of 15 mg of **1** mp 154-155°C (recrystallized from hexane/Et₂O). ¹H NMR δ1.276 (3H, s, 1 β -

CH₃), 1.472 (3H, s, 1 α -CH₃), 1.535 (1H, dd, J = 3.52 14.62Hz, H2α), 1.619 (1H, d, J = 2.81Hz, 3 -OH), 1.785 (1H, dd, J = 3.79, 14.03Hz, H4α), 1.787 (3H, s, 5-CH₃), 1.981 (1H, ddd, J = 2.64, 2.64, 14.62Hz, H2β), 2.466 (1H, ddd, J = 2.64, 2.64, 14.03Hz, H4β), 4.338 (1H, m, H3), 5.697 (1H, s, H7). ¹³C NMR δ 26.58 (q), 27.07 (q), 30.66 (q), 35.89 (s), 45.75 (t), 47.43 (t), 66.84 (d), 86.60 (s), 112.97 (d), 171.75 (s), 182.33 (s). Ir (KBr) ν (max) cm⁻¹ 3436 (s), 3020 (w), 2975, 2949, 2923, 2884, 1725 (s), 1682, 1620 (s), 1474, 1455, 1423, 1418, 1391, 1375, 1328, 1314, 1286, 1274, 1264, 1233, 1192, 1177, 1161, 1125, 1099, 1028, 980, 963, 950, 943, 881, 867, 801, 783, 684, 617, 609, 575, 569 cm⁻¹; cims (NH₃) 40eV *m/z* (rel. int.) 215.1 (M⁺ +19, 12%), 214.1 (M⁺ +18, 100), 198.1 (M⁺ +2, 4), 197.1 (M⁺ +1, 35), 94.0 (5); eims 40eV *m/z* (rel. int.) 197.1 (M⁺ +1, 4%), 196.1 (M⁺, 7), 178.1 (26), 163.1 (12), 140.1 (32), 135.1 (18), 112.1 (23), 111.1 (100), 110.1 (15), 109.1 (17), 107.2 (20), 97.1 (18), 95.1 (26), 93.1 (11), 85.1 (35), 81.1 (16), 79.1 (12), 69.1 (18), 67.1 (23), 57.1 (42), 55.1 (12), 43.0 (91), 41.0 (24); [α]_D -101.2° (c, 1.0, CHCl₃), literature: -92° to -100.5°. Uv λ (max) 218 nm, ε = 8,600 (EtOH), literature: 212 to 215 nm, ε = 14,200 to 14,800.

Previous LOLIOLIDE isolations: CA = Chemical Abstracts (Through volume 100)

2(4H)Benzofuranone-5,6,7,7a-tetrahydro-6-hydroxy-4,4,7a-trimethyl 6S-cis [5989-02-6]

Tripetalia paniculata: CA 76:56610k

Lythrum salicaria: CA 78:94863a

Cocculus carolinus: CA 78:20143n

Arnica montana: CA 83:20377v

Nicandra physaloides: CA 84:122127b

Plantago lanceolata: CA 84:147657n

"Tobacco": CA 85:59847g

Canscora decussata: CA 86:29952y

Pimelea spp.: CA 92:141462b

"Tea" : CA 94:80231e

"Mollusk": CA 94:27680z

Maytenus confertiflorus: CA 95:138482b

Padina tetrastrum: CA 97:178798g

Verbascum phlomoides: CA 99:85139n

Gentiana pedicellata: CA 100:171540p

Studies of *Salvia divinorum* (Lamiaceae), an Hallucinogenic Mint

from the Sierra Mazateca in Oaxaca, Central Mexico¹

(HTML by Arachnophilia)

Economic Botany **41**(2), 1987, pp. 283-291.

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Salvia divinorum Epling & Játiva-M. is one of the vision-inducing plants used by the Mazatec Indians of central Mexico. The present status of research is summarized. Experiments with material collected at different Oaxacan sites confirmed that the mint has white (rather than blue) flowers with a purple calyx and that flowering is induced by short daylength.

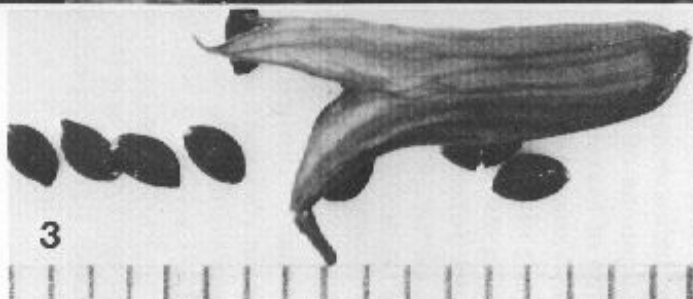
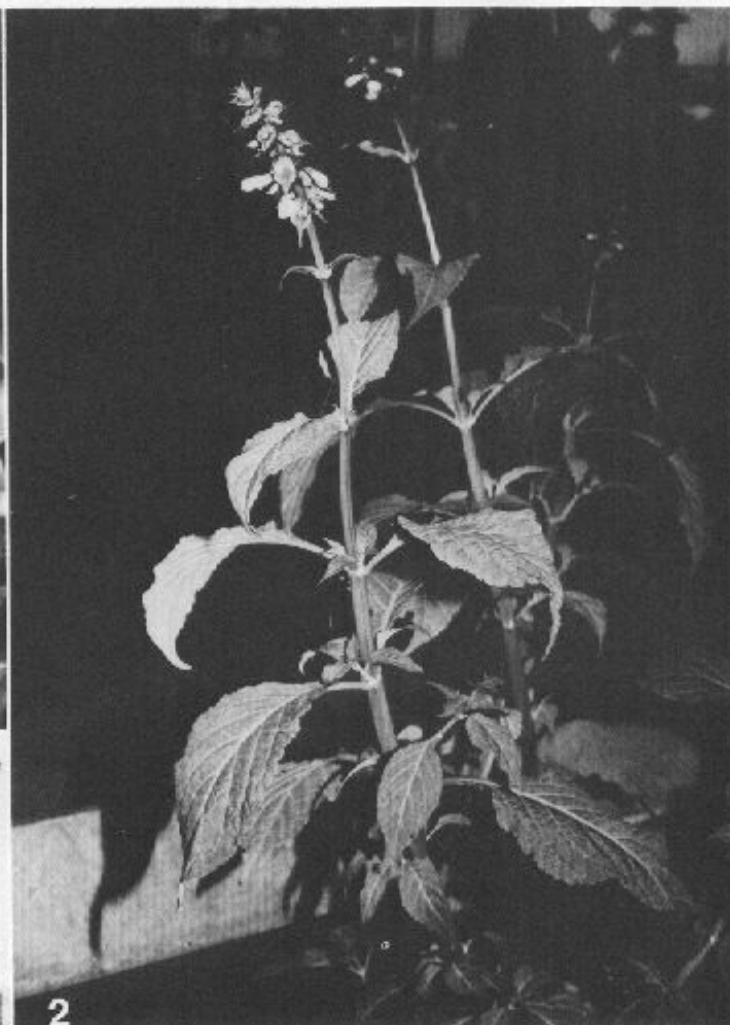


Fig 1. *Salvia divinorum* flowering in a coffee plantation on Cerro Quemado, Oaxaca (2 Mar 1980). Plant height 1 m. **Fig. 2.** *S. divinorum* at Matthaei Botanical Gardens (21 Nov 1980). Plant height 2.3 m. **Fig. 3** Seeds of *S. divinorum*. Scale markings: 1mm.

Spanish *conquistadores* arriving in Mexico during the 16th century noted native medico-religious uses of vision inducing plants such as *peyotl* (peyote, *Lophophora williamsii* (Lem. ex Salm-Dyck) Coult.), *teonanactl* (*Psilocybe* and related mushrooms), *ololiuqui* (the morning glories, *Turbina corymbosa* (L.) Raf. and *Ipomoea violacea* L.) and others (Bourke 1891; Schultes and Hoffman 1980; Urbina 1899; 1903). The New World came under the jurisdiction of the flourishing Spanish Inquisition, and Indian utilization of hallucinogenic plants was anathematic to the clergy (Aguirre Beltrán 1973). The identities of *teonanactl* (flesh of the gods) and *ololiuhqui* were forgotten for centuries (Schultes 1941b; Wasson and Wasson 1957). Expeditions to remote areas of central Mexico during the 1930s found that isolated peoples, including the Mazatecs of Northeastern Oaxaca, had continued to use hallucinogenic plants in ritual healing (Reko 1945; Schultes 1941a). The investigations of Wasson and colleagues were largely responsible for the introduction of Mazatec psychotropic plants to the outside world (Heim and Wasson 1958; Wasson 1962, 1963, 1980; Wasson and Wasson 1957; Wasson et al. 1974).

Along with rediscovery of ritual employment of mushrooms and morning-glory seeds, investigators reported the use of another divinatory plant by the Mazatec Indians. Johnson (1939) noted a vision inducing "tea" prepared from the leaves of an *hierba María* (the Virgin Mary's herb). Reko (1945) cryptically referred some unidentifiable leaves he collected in the Sierra Mazateca. Weitlaner (1952) described a ceremony using a "*yerba de María*". In 1957 Gómez Pompa collected non-flowering specimens (AGP 87556 and 93216, MEXU) of a purportedly hallucinogenic *Salvia* known as *xka* (*ska*) *Pastora* (the leaves of the shepherdess). Later, Wasson and Hoffman obtained a flowering specimen without visiting the collection site (Hoffman 1980; Wasson 1962). They gave the plant to Carl Epling, who had revised the New World *Salvia* subgenus *Calosphace* (Epling 1939). Epling and Játiva-M. assigned this new species, *Salvia divinorum* Epling and Játiva-M. (Lamiaceae), to section *Dusenostachys* (containing about 10 other species) (Fig. 1-3).

MAZATEC USE OF *SALVIA DIVINORUM*

There is little information concerning the Mazatec's existence before arrival of the Spaniards. Twenty thousand people, including Don Alejandro Vicente, a *curandero* (healer) who was our informant, were forced to leave their homelands upon construction of the Miguel Alemán Dam during the 1950's (Barabas and Bartolomé 1973; Benitez 1973; Estrada 1977; Munn 1979; Villa-Rojas 1955; Weitlaner and Hoppe 1969). Don Alejandro told us that he used *S. divinorum* in ritual divination and curing (Valdés et al 1983). The foliage is gathered as needed (it purportedly loses psychotropic activity on drying), although it may be wrapped in leaves of *Xanthosoma robustum* Schoff (and other spp.) to keep it fresh for a week. Only the leaves are employed in the preparation of medicines; a dose is measured by counting them out in pairs. Taken in small doses (an infusion prepared from four or five pairs of fresh or dried leaves), the plant acts as what we interpreted to be a tonic or panacea. It purportedly regulates eliminatory functions (defecation and urination) and cures "anemia," "headache," and "rheumatism." It also "cures" the disease "*panzón de barrego*," translated as a swollen belly caused by a sorcerer's evil curse. In large doses (an infusion made from 20 to over 60 pairs of fresh leaves) the plant acts as a mild but effective hallucinogen. The leaves may be eaten entire (Cortés 1979; Wasson 1962), but they are often crushed in water to prepare an infusion, which is then drunk (Hofmann 1980; Valdés 1983; Valdés et al. 1983; Wasson, 1962). The infusion is often preferred to taking the leaves due to their extreme bitterness (our chemical investigations indicated this is probably due to high concentrations of water soluble tannins). Depending on the type of cure, *ska María Pastora* may be taken by the patient, the *curandero*, or both.

The Mazatec names for *S. divinorum* associate it with the Virgin Mary. When it is taken to induce a visionary experience, the "timidness of Mary" supposedly allows the vision to take place only in quiet or darkness. Given the *Salvia* infusion at Don Alejandro's home, Valdés (1983; Valdés et al. 1983) noted that village noises prevented full manifestations of its effects. However, on returning to the room where the researchers were staying, he underwent an experience that surprised

him by the vividness of its apparent "reality." He found himself in an open meadow conversing with and holding on to a being in a white robe. It was an astounding visual, oral/aural, and tactile hallucination. Don Alejandro said the effects of the *Salvia* were similar to those produced by ingestion of morning-glory seeds. Taking an infusion of the morning-glory seeds under Don Alejandro's supervision at a later date, Valdés noted parallels between the two experiences. Both had a duration of several hours, and the subject eventually drifted off to sleep. A side effect common to both experiences is muscular incoordination. Because both plants are psychotropically weaker than vision inducing mushrooms, Don Alejandro used them to a greater extent, since he felt they were less "dangerous." He told us that after becoming experienced with the *Salvia*, a prospective *curandero* progresses to the morning-glory seeds and finally to the mushrooms. The obscurity of this mint, its bitter taste, and a misunderstanding of its psychotropic effects have kept it from becoming a recreational drug (Díaz 1975; Foster 1984; Hofmann 1980; Valdés 1983; Valdés et al 1983; Wasson 1962). Díaz (1975) reported that young people from Mexican cities travel to the Sierra Mazateca and purchase dried leaves of *S. divinorum* to make into cigarettes and smoke as a marijuana substitute. The effect is reportedly milder than that of *Cannabis*.

CHEMISTRY OF *SALVIA DIVINORUM*

Hofmann was the first to isolate and identify the psychoactive ingredients in the Mexican mushrooms and morning-glory seeds. He later made chemical studies of *S. divinorum*, but was unable to isolate and identify the compound(s) responsible for the plant's activity in human beings (Hofmann 1964, 1980). Work by Díaz (1975) suggested that the *Salvia* contained alkaloids. In 1980 we began a bioassay directed analysis of leaves from plants grown at the Matthaei Botanical Gardens. Two diterpenes (Fig. 4) were eventually isolated (Valdés et al. 1984); one of them caused sedation in mice when tested in a modification of Hall's open field (Brimnlecombe and Greene 1962; Ryall 1958; Turner 1965; Valdés 1983). Normal mice remain active in the field for at least 30 min before finally resting; however, those given intraperitoneal doses of compound 1 were sedated in the field (compound 2 was inactive). Diterpene 1 is apparently not very toxic, as we have given it intraperitoneally to mice in doses up to 1 g/kg with apparent complete recovery after a few hours (the mice were observed for a week without incident; no necropsies were performed). Since the mice obviously not report "visions," we also dosed them with mescaline (an hallucinogen), secobarbital (a sedative-hypnotic), a partially purified ether extract of *Cannabis sativa*, and a pharmacologically active diterpene, forskolin. All compounds produced a sedation in mice when tested in the open field; that produced by mescaline was similar to the activity of the *Salvia* compound (unpublished data).

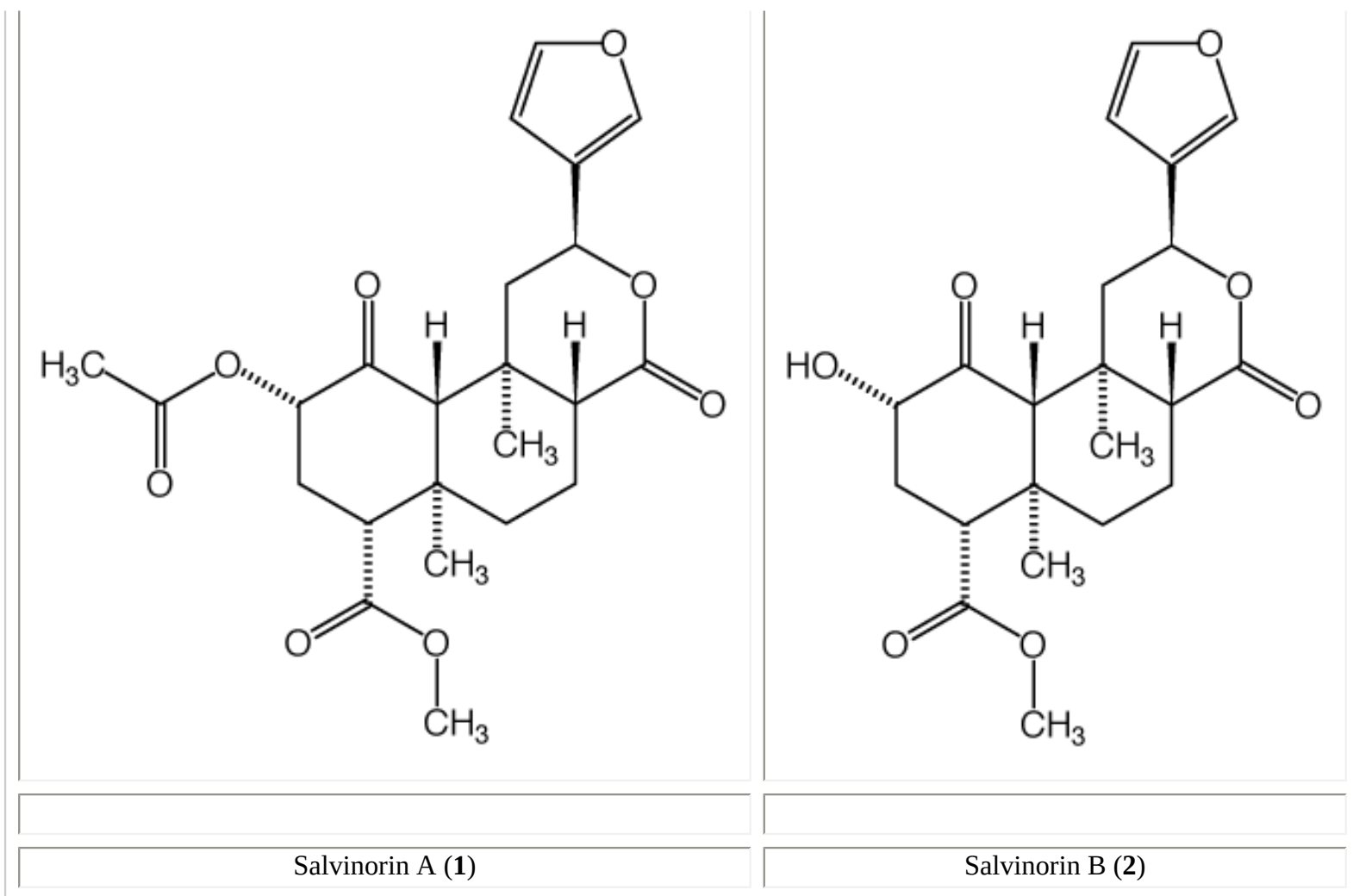


Fig. 4.Salvinatorins A (1) and B (2) isolated from *S. divinorum*.

We named the new terpenoids divinorins A (1) and B (2), but later found that Ortega et al. (1982) previously isolated a compound, salvinatorin, from *S. divinorum* that was identical to 1. Therefore the diterpenes should be known as salvinatorins A and B respectively. In our studies of the mint's activity we noticed that salvinatorin A was not so active as partially purified *Salvia* extracts in the open field. Further investigations have led to isolation of more diterpenes structurally related to 1. We are presently in the process of characterizing and testing these compounds for pharmacological activity. If salvinatorin A and the new compounds we isolated from the mint prove to display hallucinogenic activity in humans, it will mean addition of a new class of compounds (the terpenes) and eventually new plant genera to the psychotropic pharmacopoeia. Diterpenes similar in structure to the salvinatorins have been isolated from the ornamental *S. splendens* (Savona et al. 1978, 1979), as well as several other species of New World *Salvia*. Although only a few of the several hundred species in subgenus *Calospatha* have been chemically investigated to date, diterpenes could prove to be very useful as chemotaxonomic markers in determining relationships within the subgenus.

BOTANICAL OBSERVATIONS ON *SALVIA DIVINORUM*

Wasson (1963) suggested that *S. divinorum* might be the plant the Aztecs knew as *pipiltzintzintli* ("most noble prince" or "venerable little children"); this name has become associated with the mint in recent literature (Emboden 1979; Foster 1984; Schultes 1976). Aguirre Beltrán (1973) summarized the data on *pipiltzintzintli* contained in the Inquisitorial Archives. It was apparently an hallucinogenic plant that had male and female varieties. All plant parts, including the roots and flowers were used medicinally (no mention was made of the seeds), and it was cultivated for such purposes. Aguirre

Beltrán, claiming that *pipiltzintzintli* was actually *ololiuhqui*, presented a convincing argument for his assumption. Investigators have shown that the leaves and stems (aerial portions) of both *Turbina corymbosa* and *Ipomoea violacea* contain significant amounts of the psychotropic alkaloids found in their seeds (Staba and Laursen 1966; Taber et al. 1963). Díaz (1979) cited a contemporary reference (Alzate 1772) that identified *pipiltzintzintli* as *Cannabis*. Although the morning-glories and cannabis are likely candidates, a precise botanical identification of *pipiltzintzintli* remains uncertain. Association of *S. divinorum* with the ancient Aztec plant is tenuous at best.

In describing *S. divinorum*, Epling stated that the flowers had a blue calyx tube and corolla, making an error that has endured in the literature (Foster 1984; Schultes 1976; Schultes and Hofmann 1980). Epling had a living specimen that he cultivated and presented to the botanical garden at the University of California, Los Angeles (accession 63-104). A living sample of this material is at the University of California, Berkeley (accession 76.100). After propagating material from these collections, Emboden correctly described the flowers as having a white corolla surrounded by a violet calyx (Emboden 1979, pers. comm. 1980). Until our expedition to Mexico, all *S. divinorum* growing in the United States was apparently descended from this single specimen (B. Bartholomew, pers. comm 1980; D.S. Verity, pers. comm. 1980; R.G. Wasson, pers. comm. 1980).

Salvia divinorum is reported to be a cultigen that rarely blooms (and then only when the branches are over 7 ft long) and apparently never sets seed (Emboden 1979; Foster 1984; R. Ornduff pers. comm. 1980; Wasson 1962). Nothing is known about natural pollinators, but the plant is parasitized by several species of insects (Díaz 1975). Don Alejandro told us that *ska María pastora* could be found over wide areas of the Mazatecan highlands. But Cerro Rabon is a tall (2,100 m) and still relatively inaccessible mountain. Mazatecan legends consider it to be a semidormant volcano, with a magical lake at its summit. It is supposedly populated by local gods, demons and magical beings (Benitez 1973; Espinosa 1961; Incháustegui 1977). Therefore, after observing the localities in which the *Salvia* grew, we believe the mint is collected in the highlands and planted in more accessible places, where it becomes naturalized. It is doubtful that the *Salvia* is a true cultigen. Among flowering specimens we collected on Cerro Quemado, one (Fig. 1) was only about 1 m tall. We saw remains of flower spikes in a stand on Cerro Rabón near the village of Ayautla. Seeds (i.e., mericarps) were not found at either site. During our conversations Don Alejandro told us that the flowers produced seed that could be planted to grow the *Salvia*. While growing it for chemical research, we performed experiments that clarified some of the botanical questions surrounding the plant.

In addition to our collections of living specimens from both sites, we were able to obtain cuttings of plants asexually propagated from the original specimen obtained by Wasson and Hofmann in the village of San José Tenango, Oaxaca (B. Bartholomew, pers comm. 1980; D.S. Verity, pers. comm 1980; R.G. Wasson pers. comm. 1980). From herbarium sheets of Oaxacan collections, we noted that flowering specimens were collected only between late August and March, a time of short days (Valdés 1983). In Mexico City (which is not far north of the collection localities), daylength reaches a maximum of 13h in June and decreases to about 12 h in October (Salisbury and Ross 1978). Although most plants affected by daylength need exposure to a certain critical dark period to begin the development of flower buds, some need a tapered decrease in daylength to induce flowering (Bickford and Dunn 1973). Using this information, we devised a series of experiments.

FLOWER INDUCTION EXPERIMENTS

Preparations

Round plastic pots of 25 cm diameter and 25cm depth were filled with a mixture of topsoil, peatmoss, vermiculite, and perlite (4:2:1:1 vol/vol). A rooted 10-20 cm *Salvia* stem cutting (two or three nodes) was placed in each pot. Plants were watered as necessary. They were fertilized weekly with 1.0 l of a 2 tsp/5 gal solution of a 15-30-15 soluble fertilizer containing trace elements (Stern's Miracle-Gro[®], with 0.05% each of Cu, Mn, and Zn as the sulfates and 0.1% Fe as a chelate) with 1 ml of an 85% phosphoric acid solution added to counteract basicity. This routine was used for all experiments.

Outdoor and greenhouse experiments

About 50 plants were cultivated in an Ann Arbor garden during summers. They were put in a greenhouse (Matthaei Botanical Gardens) in September 1980 and placed on 28 in tall 6 ft by 17ft benches. Minimum greenhouse temperature was 10°C. Maximum temperature (10-30°C) depended on outside conditions.

Experimental results

Buds were observed in late October. Flowering began on 10 Nov and continued until early January 1981. All specimens bloomed. Similar results occurred during 1981 and 1982. In autumn 1983 another research group used artificial lighting to extend greenhouse daylength, which caused the *Salvia* to abort flowers and revert to vegetative growth.

In the green house at a northern latitude *S. divinorum* elongated rapidly several feet in height shortly before flowering (Fig. 2). Although the mint was normally nearly devoid of odor, its upper leaves and flowering stalks became strongly aromatic as buds developed. We always observed pubescent white flowers with a purplish to blue-violet calyx. Sometimes, just before opening, the tip of the corolla displayed a lavender tinge, which eventually disappeared. The corolla was usually shed within 72h after complete opening.

Plants collected on Cerro Quemado were crossed with descendants of Epling's original specimen on 19 and 21 Nov 1980. Previous trials and other information (Emboden 1979; R. Ornduff, pers. comm. 1980) indicated that the species is probably self incompatible. Of 14 hand-pollinated flowers (later protected by glassine envelopes), four set seed, which was collected on 16 Dec 1980 (Fig. 3). Our attempt to grow the seeds in a growth chamber failed when it overheated to 75°C, drying their medium and killing them (the mature plants in the chamber died to the soil level, but soon grew again).

Growth chamber experiments

Sherer Environmental Chambers models CEL-512-37 and CEL-34-14 were freshly outfitted with incandescent (93W) and cool white VHO fluorescent bulbs. Eleven plants from each of the three sources were divided between the two chambers. Plant-top light-intensity varied from 2,800-3,300 ft-c, depending on plant height and the chamber involved. Controls were set for maximum relative humidity (measurements varied between 50 and 100%). Temperature was set at 22°C day (16H) and 17°C night (8 H). Plants were grown under these conditions for 12 wk. Beginning 24 Jan 1980, daylength was decreased from 16 to 11 h over a 4 wk period.

Experimental results

Buds were noted on 4 Apr 1980; flowering branches were collected on 20 Apr 1980 (*Valdés s.n.*, 22 Oct 1980, MICH). All plants flowered at a height less than 1.0 m; the flowers had a purplish calyx and white corolla. Repeating the experiments with an abrupt change from 16 h to 11 h days indicated tapered decreases in daylength were not necessary to induce flowering. Increasing daylength to over 12 h caused plant to revert to vegetative growth and abort flowers (*Valdés s.n.*, 15 June 1981, MICH). Later a malfunctioning timer switch indicated that less than a week of 24h days induced this reversion, even if conditions were returned to short (11h) days.

DISCUSSION AND CONCLUSION

The greenhouse and growth-chamber experiments indicated that *S. divinorum* is an obligate short-day plant. Plant height is a minor factor in flower development, as several (growth chamber) specimens were less than 0.5 m tall when they flowered. Pollination experiments showed that the mint is probably self-sterile, but it remains to be demonstrated that *S. divinorum* will set viable seed.

To test for the hallucinogenic activity of *S. divinorum* in human beings, we drank the infusion of the leaves and waited for the effects to occur. Within 30 min we began to see visions, which lasted for several hours. This allowed rapid confirmation of the mint's psychotropic activity. But more interesting from a therapeutic standpoint are the other properties attributed to the plant; properties that are much more difficult to assess. Are these concepts that are translatable into our western (orthodox) healing theory, or is *ska María Pastora* being used as a magical treatment (for a placebo effect)? Extended observations in the field by an acute observer would undoubtedly be more fruitful than immediate attempts to isolate compounds responsible for these purported activities.

Although all recent information about the use of this mint has been gathered from Mazatec informants, the early reports of Reko and Weitlaner indicate that other tribe may have used it also. Reko (1945) alluded to use of the divinatory leaves by the Cuicatecs (in the district of Cuicatlán) as well as by the Mazatecs. Weitlaner (1952) noted that a plant called "*yerba de la Virgen*" was used for divination by the Otomi people of Tulancingo in Hidalgo and suggested it could be the same species as the "*yerba de María*" used by the Mazatecs.

Much botanical work remains to be done on *S. divinorum*, from further investigations of its range, habitat, pollination, and distribution, to a final unraveling of the taxonomic and genetic questions that have been raised about the plant and its relationships within the genus.

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***Salvia divinorum* and the Unique Diterpene Hallucinogen,
Salvinorin (Divinorin) A**

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(HTML rendering by Arachnophilia)

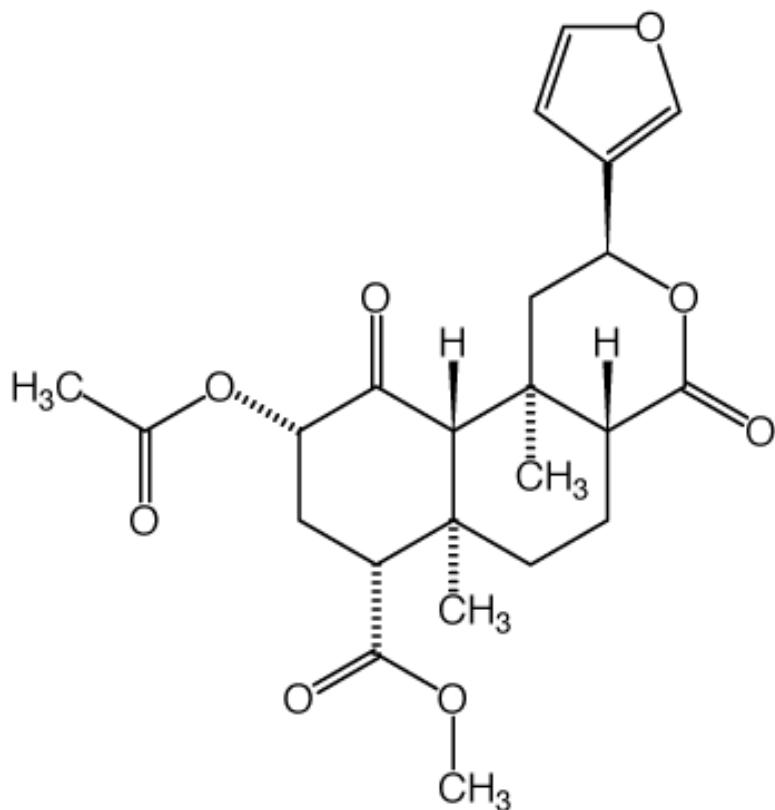
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Abstract - *Salvia divinorum* is a vision inducing mint used by the Mazatec people of Oaxaca, Mexico. It is grown in California and other parts of the USA where it is employed as a legal hallucinogen. Traditional opinion has been that the plant has mild psychotropic activity, at best. However, when ingested in the correct manner, it is quite powerful. The fresh leaves are chewed as a quid and kept in the mouth. They may also be eaten raw or prepared as an aqueous infusion. When dried, they are smoked in the manner of marijuana. The neoclerodane diterpene, salvinorin A (also known as divinorin A), has been demonstrated in animals and humans to be its major active ingredient. Essentially inactive if taken orally, the compound is effective in doses of 200 to 500 mcg when smoked in a manner similar to cocaine free base. This makes salvinorin A the first documented diterpene hallucinogen and the most potent naturally occurring hallucinogen thus far isolated. This is somewhat remarkable, since the compound is not an alkaloid. The article reviews the use of *S. divinorum* and its chemistry. It discusses the effects of the plant and salvinorin A in animals and humans, as well as their potentials to become drugs of abuse.

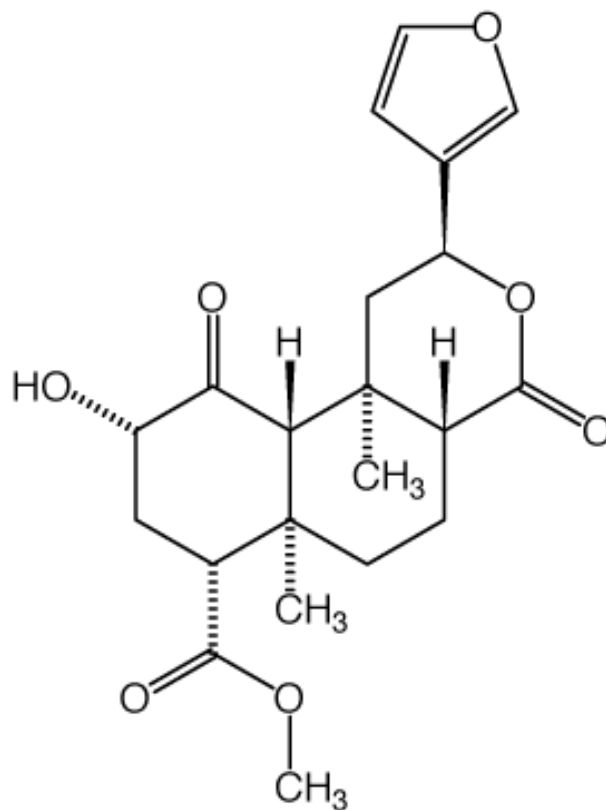
Keywords - diterpene, divinorin A, hallucinogen, *Salvia divinorum*, salvinorin A

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Salvinorin A (1)



Salvinorin B (2)

FIG. 1 - STRUCTURES OF SALVINORINS (DIVINORINS) A (1) AND B (2)

While conducting research on Mexican morning glories and hallucinogenic mushrooms (Schultes & Hofmann 1980), Wasson and Hofmann collected a psychotropic member of the Lamiaceae (Labiatae) or mint family in the state of Oaxaca, Mexico. They brought it to the United States, where it was identified as a new species, *Salvia divinorum* (Wasson 1963, 1962; Epling & Játiva-M. 1962). One of some 700 New World species of the genus *Salvia*, this plant is known to its Mazatec Indian users as *Ska María Pastora* or *las hojas de la María Pastora* (the leaves of Mary, the Shepherdess). In field studies, the present author was fortunate to work with Don Alejandro Vicente, a true *maestro* of *curanderos* (healers), and his son, Felipe, who translated between Spanish and Mazatec. They lived in the lowlands of eastern Oaxaca, and one had to travel to the mountains, Cerro Rabón or Cerro Quemado, where the plant grows, in order to collect its leaves.

S. divinorum is used by Mazatec *curanderos* for its hallucinogenic effects. They believe it allows them to travel to heaven and talk to God and the Saints about divination, diagnosis, and healing. It is reputed to be weaker than both the morning glory seeds and the various species of mushrooms. Thus, it is often the first of the three psychotropic plants employed in the training of future shamans. In addition to being used as an hallucinogen, it is also given in low doses for what may be interpreted as placebo effects. The fresh leaves may be chewed as a quid (Blosser 1993), eaten or prepared as an infusion (Wasson 1962). Don Alejandro indicated that a psychotropic dose consists of an extremely bitter infusion prepared from 20 to 80 pairs (counting is always done by pairs) of fresh leaves. A "placebo" dose is prepared from 4 to 5 pairs of fresh or dry leaves. The lower dose is to alleviate the sick or dying, cure "anemia," regulate excretory functions and treat a swelling of the belly called *panzón de barrego* (sic), "a sheep's belly" caused by a shaman's curse. Detailed field descriptions of this work with *S. divinorum* have appeared elsewhere as well as reviews of all previous ethnological reports (Valdés 1987; Valdés, Díaz & Paul 1983; Valdés 1983).

CHEMICAL INVESTIGATIONS OF *SALVIA DIVINORUM*

After discovering the active principles of the morning glories (lysergic acid amide derivatives) and mushrooms (psilocybin and psilocin), Hofmann turned to the study of *S. divinorum*. However, his chemical and pharmacological investigations were unsuccessful and he stated that the active principle was apparently unstable (Hofmann 1964, 1980; Schultes & Hofmann 1980). Díaz and colleagues studied the mint extensively, but had limited success in the chemical aspects of their research (Díaz 1979, 1975). In 1980, a bioassay-directed investigation of the plant was undertaken. The assay was based on the behavior of mice in the open field, which has been employed to test compounds for psychotropic activity (Brimblecombe & Greene 1962). This study used rats in the open field, which was modified for mice in the *S. divinorum* study. An aqueous infusion of the fresh leaves was prepared, using the open field to test the various fractions and extracts for activity. Eventually, an impure active compound was isolated via preparative thin-layer chromatography (TLC). Obtaining it from the infusion was extremely inefficient and it was found that lyophilizing (freeze-drying) the leaves and extracting them as explained below gave much better yields. The active compound turned out to be a new furanolactone neoclerodane diterpene which was named divinorin A (**1**); its inactive desacetyl derivative, divinorin B (**2**), was also isolated (Valdés et al. 1984; Valdés 1983). As the results were being prepared for publication, Ortega, Blount & Marchand (1982) reported the isolation of a compound (no biological activity was mentioned in their paper) they called salvinorin, which turned out to be identical to divinorin A. Therefore, divinorins A and B should be known as salvinorins A (**1**) and B (**2**), respectively (see Figure 1).

Testing of salvinorin A in the open field indicated it had activity and potency similar to that of mescaline. Originally both compounds appeared to exhibit sedative activity in the modified open field (Valdés et al. 1987; Valdés et al. 1984; Valdés 1983). However, further testing and comparison of the two compounds to amphetamine, secobarbital, forskolin, and cannabis extract has allowed a different interpretation of the experimental results: amphetamine stimulated the mice; secobarbital, forskolin and the cannabis extract had strong sedating effects, and, at higher doses, the animals lost their righting reflex (the ability to right themselves if turned on their side or upside down). Mescaline, salvinorin A and isosalvinorin A - the 8-epimer of salvinorin A (Valdés et al. 1984) - interrupted (decreased) animal activity without an accompanying true sedation, as the mice could be readily stimulated to move rapidly for short periods by sharp noises or light touching. They maintained their righting reflex at all dose levels of the three compounds (from 3.2 to 100 mg/kg). Loliolide (Valdés 1986) was isolated from *S. divinorum* and the absolute stereochemistry of the salvinorins was unambiguously determined using the non-empirical exciton chirality circular dichroism method on their 1,2-diol dibenzoate tetrahydrofuran derivative (Koreeda, Brown & Valdés 1990).

SALVIA DIVINORUM AND SALVINORIN A AS POTENTIAL DRUGS OF ABUSE

Until recently, *S. divinorum* was considered to be a plant with low abuse potential. The large number of fresh leaves needed and the bitterness of the prepared infusion tend to discourage all but the most intrepid users. The effects of the potion have been reported to be from mild to nearly nonexistent, but field observations in Oaxaca demonstrated that intense and long-lasting visions do occur (Valdés 1983; Valdés, Díaz & Paul 1983). Some Mazatecs, as well as non-native experimenters, chew a coca-like "quid" of the fresh leaves which induces strong and persistent visions (Siebert In press; Blosser 1993; Ott 1993). Although the Mazatecs use only fresh leaves for visionary experiences, the dried leaves retain activity and are smoked by marijuana users and others in Mexico and the U.S. The effect has been reported to be either like that of marijuana or of taking the infusion (Ott 1993; Díaz 1975). The plant has been described as the *entheogen* (hallucinogen) *par excellence* (Ott 1993).

There are two inaccuracies about *S. divinorum* that are fixed in the literature. It was identified by Wasson (1963) as possibly being the ancient Aztec narcotic plant *pipiltzintzintli* and this has been perpetuated until the present (Ott 1993; Foster 1984; Anon. 1973). It has been demonstrated that either marijuana or one of various species of morning glories are better candidates for being the unknown Aztec plant. From the descriptions quoted by Aguirre Beltrán (1973) it is obvious that *pipiltzintzintli* cannot be *S. divinorum* and even Wasson, himself, later doubted his own hypothesis (Valdés 1987; Díaz 1979). When Wasson and Hofmann first acquired *S. divinorum*, it was brought to them by a *curandera*, and they were not allowed to go to the location where it actually grew. From early statements made by Wasson (1963; 1962), it has been surmised that the plant is a cultigen which exists only in a few Mazatec gardens, and the Mazatecs consider the plant to be foreign to their region (Ott 1993). Don Alejandro informed us that the plant grows wild in the fairly inaccessible highlands of the Sierra Mazateca. It is brought by Mazatec shamans to the lower mountain regions, planted, and left to "grow wild" near the villages where they live. During field-collecting expeditions, it was seen growing freely over a huge area for a couple hundred meters along the side of a

creek in a small ravine. It was also scattered throughout a *cafetal* (coffee plantation). The plants were blooming, and there were remains of flowering spikes, but no seeds. This indicated the stands were probably monoclonal and apparently originally started by humans. However, in neither location was there any sign of cultivation of the mint. A search of specimens in the herbarium at the University of Mexico did not indicate that any were collected from sites where they were being cultivated. Díaz has made similar observations (Valdés et. al. 1987; Díaz 1975; Valdés 1983).

Plants of *S. divinorum* being grown in the USA do not readily set seed (Grubber 1973), probably because most are from a single clone. However, Don Alejandro stated that the *ska María Pastora* in the highlands did make seeds. Limited cross-pollination experiments were attempted, in which seeds were produced, but an overheating growth chamber killed them (Valdés et al. 1987). Recently Siebert (1994) indicated that he harvested viable seeds at the Botanical Dimensions Gardens in Hawaii. These sprouted 3 weeks after planting, and are growing very slowly. The mint is easily propagated from cuttings (Anon. 1994; Valdés, 1987; Foster 1984; Grubber 1973). When Wasson and Hofmann received it in 1962, they brought back living plants which were acquisitioned by the UCLA Botanical Gardens (Emboden 1980; Verity 1980). In 1980 and 1981 the present author collected it in Mexico and recently Blosser (1993) returned with specimens of a less bitter strain of the plant. Clones of these plants are being grown throughout California and other parts of the United States. Up until now it has been possible to produce enough *S. divinorum* at home, and in greenhouses, for extensive research (Koreeda, Brown & Valdés 1990; Valdés et al. 1987; Valdés, 1986, Valdés et al. 1984; Valdés 1983). Having 80 to 100 twelve inch pots (5 cuttings/pot) arranged quincuncially in an area of 4 x 4 m (12 ft by 12 ft), indoors (on benches under normal cool-white fluorescent lighting) or outdoors, can yield well over 1 kg per month of dried leaves once the plants are established (about 2 to 3 months). When the mint is growing rapidly, it can provide several cuttings per week. Cultivated outdoors, the plant resembles many others and is somewhat difficult to identify (it took 20 years to find out it was a new *Salvia* species). Its characteristics are its white flowers with persistent purplish calyces and spikes, which occur for about a week or two between late October and early March. It also has square stems and opposite leaves, like those of many other mints. *S. divinorum* is available commercially, possession is not controlled, and there is a market for the plant (Anon. 1994; Ott 1993; Foster 1984). Lay publications are available which describe its use as a hallucinogen (Ott 1993; Anon. 1972) and give instructions for cultivation (Foster 1984; Grubber 1973). TLC comparisons of extracts from leaves collected in Mexico compared to those harvested in Michigan and Louisiana showed all were essentially identical as to salvinatorin A content, so there appear to be no great geographical differences in plant chemistry.

Salvinorin A is quite stable and drying leaves under normal conditions doesn't affect yields. With care about 1.50 g of pure salvinorin A per kg of air-dried *S. divinorum* leaves (about 8 kg fresh leaves) can be isolated. Open field testing indicated that the diterpene had a potency equivalent to that of mescaline. A human dose of mescaline ranges from 0.2 to 0.6 gm (Schultes & Hofmann 1980), so it was concluded that 1 kg of dried leaves yielded only 3 to 6 human doses of salvinorin A and, therefore, it had little potential for widespread abuse. Recently, however, Siebert stated that vaporizing and inhaling 200 to 500 mcg of the compound induces profound hallucinations. Higher doses may cause problems (Siebert In press; Siebert 1994). This has been corroborated by others (Ott 1994; Blosser 1993). It is apparent that salvinorin A is an extremely potent hallucinogen. The compound is the first diterpene to be confirmed as one in humans and it is also the most potent naturally occurring hallucinogen thus far isolated. This is rather remarkable, considering that all major naturally occurring hallucinogens have been alkaloidal in nature.

A particular problem with salvinorin A is that it is extremely potent and readily isolated from dried plant leaves, if one follows the procedure properly (Valdés et al. 1984). It was developed to maximize the yield of the diterpene while minimizing chromatography. After extracting the dried leaves with ether in a Soxhlet apparatus and partitioning the extract between hexane and aqueous methanol, one has a fraction that is almost 10 % salvinorin A by weight when dried. This procedure is so effective at concentrating the diterpene that the crude compound often precipitates out of the aqueous methanol solution before being subjected to chromatography. Ether is used to extract the plant material because it has a low boiling point, but chloroform or methylene chloride will serve as well for this initial extraction. Chromatography is used for final purification of the compound because it is faster and gives higher yields than repeated recrystallization of the precipitate. An underground chemist, however, would not need to be so meticulous. There is no need for using a Soxhlet apparatus and experimenting could lead to the use of commonly available solvents for the extraction. Yields of even a gram per kilogram of dried leaves would give one some 2000 human doses.

EXAMINATION OF THE EFFECTS OF SALVINORIN A AND *SALVIA DIVINORUM*

Salvinorin A is most effective when vaporized and inhaled. Siebert, in his pioneering study on the effects of the diterpene in human volunteers, stated that heating it on a piece of tinfoil and inhaling the vapors via the mouth through a short glass pipe induces profound hallucinations. A dose of 200-500 mcg produces visions that last from 30 minutes to an hour or two, while doses over 2 mg are effective for much longer. At doses greater than 500 mcg the subject is often no longer aware of their surroundings and may enter an uncontrollable delirium; they must be watched carefully (Siebert In press; Siebert 1994). This method of dosing, smoking the compound in a short glass pipe, as well as its potency have been corroborated by others (Ott 1994; Blosser 1993). Siebert also reported that encapsulated doses of salvinorin A up to 10 mg taken orally were ineffective in his subjects. He tried spreading the compound on the oral mucosa of the volunteers, but found absorption and effects to be erratic (Siebert In press).

This is interesting, because testing of the compound in the open field indicated it had the relatively low potency of mescaline. We found that salvinorin A was insoluble in water; it had to be dissolved in corn oil and Tween-80 (a surfactant) before adding water to make an emulsion. The emulsion had to be shaken thoroughly before dosing each animal, as it would readily break (settle). It was administered by intraperitoneal injection (3.2 to 100 mg/kg of salvinorin A) and log-dose/response curves of measured behavioral parameters were satisfactory (Valdés 1983). In toxicity studies mice were dosed at 1 g/kg of salvinorin A (the limits of being able to make a serviceable preparation) and observed them for a week. All animals survived and appeared unharmed, but they were not autopsied (Valdés et al. 1987). It is obvious that salvinorin A is not absorbed in the gastrointestinal tract when taken orally, since it doesn't dissolve in aqueous solutions. From these animal studies one can conclude that the emulsion of the compound allows regular peritoneal absorption. The same might be true if it were given orally. Although not as potent as inhalation of the vaporized compound, the effects might last longer. Salvinorin B was inactive in animal testing. It is much more polar than salvinorin A. A combination of its being less likely to cross membranes and lack of a really good emulsion would account for these findings. It would not be surprising to find it active if vaporized and inhaled, but it would probably only be effective at much higher doses than salvinorin A.

The foliage of *S. divinorum* is prepared in various manners for use as a psychotropic agent. The dried leaves may be smoked like marijuana joints. Taking five or six rapid deep inhalations from one cigarette produces an effect similar to that of marijuana or taking the *Salvia* infusion. It has a duration of one to two hours (Ott 1993; Díaz 1975). The fresh leaves may be chewed and retained in the mouth. Blosser collected a strain of *S. divinorum* with leaves that are much less bitter than normal. His Mazatec informants made a "quid" of four to five pair of these fresh leaves and retained the juices in the mouth, which was more effective than ingesting them. This has been confirmed by other investigators, who have used the normal bitter strains. They state that the duration of such visions is from one to two hours (Siebert In press; Blosser 1993; Ott 1993).

The Mazatec most often take *S. divinorum* by eating the fresh leaves, or preparing an infusion from fresh foliage that has been crushed by hand or ground on a *metate* (a flat stone utensil). The effects of ingesting the leaves or imbibing the infusion are reported to be identical. Doses are similar, from 5 to 80 pairs of leaves. When taking fewer than 20 pairs, activity may be perceived to be minimal or non-existent. It is essential to understand that effects are readily offset by light and noise. Not taking this into consideration often leads the experimenter to believe that there are no effects or that they are mild and of short duration (Foster 1984; Valdés 1983; Hofmann 1980; Wasson 1978, 1963, 1962).

Field work has shown that under these necessary conditions of quiet and darkness, intense and long-lasting visions do occur (Valdés et al. 1987; Valdés, Díaz & Paul 1983; Valdés 1983). As part of a research project, and under the guidance of Don Alejandro and Filipe Vicente, the present author twice drank the infusion prepared from *S. divinorum* leaves; taking it also was Dr. José L. Díaz; Ara Paul observed. The Mazatecs ingest psychotropic plants only under certain ritualized circumstances. In this case, the *Salvia* potion was given to "study" the plant and become healers. Before each session Don Alejandro would spend the late afternoon and early evening relating tales of Mazatec curing and mythology (Incháustegui 1977). About 8:00 pm he prepared the infusion by crushing the leaves in water as described above. After it was made, it had a good head of foam, which he said was an indication of strength. He then offered ceremonial prayers for each of us asking God and various Saints, as well as Mary (the patroness of the *Salvia*) to reveal the arts of healing and the medicinal herbs. The *curandero* spent an hour describing in detail the journey to heaven, the personages to be encountered and the things to be seen. He told us not to be afraid, and emphasized that we had to speak out our visions (Wasson et al. 1974). Afterwards, we were to follow a special "diet" for four days to two weeks. Just before we took the preparation he performed a *limpia* (ritual cleansing) with *piciete* (a mixture of tobacco and lime) and incense. This was for protection on our journey and to help us in our learning. The first time

we drank the infusion, he took it also, so he could "watch over us."

For my first encounter with *las hojas de la Pastora*, I was given a beginner's dose prepared from 20 pairs of leaves. I had a few minor experiences at first, but 45 minutes after drinking the preparation I felt myself flying through pitch black space past various brightly colored objects. I came to one of them. It turned out to be a Mazatec village and I viewed it from above, as if from a hill. It appeared to be almost real, although the colors were somewhat emphasized. There were shapes like pillars of kaleidoscopic smoke at the sides of some of the houses. Then I began to recede from the apparition. I did not speak out as I was instructed to. An hour after we started, Don Alejandro went outside and vomited, indicating it would stop his visions. For the next hour he listened to what we had seen and then related his visions while commenting on ours. He told me it was necessary to speak out. We then went to sleep and arose the following morning at 4:30 am in good spirits.

My second experience occurred about six months later. Again, Díaz also took the infusion, while Paul tape recorded the session (Valdés, Díaz & Paul 1983). Don Alejandro's preparations were much like that for the earlier session, except that my drink was made from 50 pairs of leaves. This time the *curandero* felt he did not need join us. He was a *maestro*, one who could journey to heaven and talk to God and the Saints without resorting to the psychotropic plants (Incháustegui 1977). Felipe told us that his father had a direct access to God in Heaven. It was the spiritual version of a long-distance telephone call. We drank the infusion at 9:00 pm. Unfortunately the village was extremely noisy that evening, especially the continual barking of the dogs. After about 15 minutes, we began to have visions. This time I spoke mine out, alternating between English and Spanish, which helped to fix them in my mind. Díaz spoke first and mentioned flowers. I then saw eidetic images that evolved to plants and flowers. These later became giant fruits and seeds. At the same time I felt that I was twisting inside my body as well as spinning around. I saw a burning cross with two horizontal rays. It stopped flaming and began to emit light. Suddenly I seemed to be very heavy, as though something were pushing me into the bed. My arms felt sore. Later I saw what looked like a darkened picture in black and white. Díaz apologized to Don Alejandro for our inability to see the religious figures the *curandero* had described. My vision then changed back to color, with praying figures resembling those seen in Mexican churches. They were faceless and their clothing was covered with gold. The image of a jewel-encrusted single-rayed cross appeared. It converted itself slowly back and forth to a sword. In the center of the image I could see animals, plants and people. If the vision started to change or disappear, I could concentrate and bring it back. The last image was that of a castle that was transformed into a Byzantine church. Hooded, faceless, monklike figures marched around it.

About 50 minutes had gone by and Felipe suddenly stopped the session. Don Alejandro told him that there was too much noise for a meaningful experience. As we left the bedroom, Díaz and I staggered and stumbled. The tape recording later confirmed that our speech was slurred and we spoke in awkward patterns, although we both felt quite alert. Díaz said that it was as if the body were intoxicated, but the mind wasn't. Don Alejandro spent an hour discussing our visions with us. He said that once we returned to the motel where we were staying, they would come back and last throughout the night. With more experience, we would begin to understand the use of the plant and the ways of healing. We could continue "studying" on our own. The *curandero* cautioned that Paul should drive back. During the return journey, in the quiet darkness of the car, the imagery returned. I saw the Virgin of Guadalupe. If the vision began to fade, I could will it back. We returned to the well-lit motel where there was music and noise. I thought the experience was over and things had returned to normal. Díaz felt cold and wrapped himself in a *sarape* (he noted that this had happened on other occasions when he took the infusion). We ate a light supper, showered, turned out the light, and went to bed. It was 11:30, some 2.5 hours after I first drank the potion. In the motel room, the imagery came back stronger than ever. Even though I didn't speak out, I saw a pulsating purplish light that changed to an insect-like shape, perhaps a bee or a moth, and then into a pulsating sea anemone. It expanded into a desert full of prickly pear cacti, and remained so for several minutes. During the first session and throughout the night, my visions had all appeared to be something like a cross between a silent moving picture and a cartoon. I felt myself to be an observer of these mute visions, rather than being an actual part of them. Suddenly, however, I was in a broad meadow with brightly colored flowers. I had just crossed a stream by way of a small wooden bridge. Next to me was something that seemed to be the skeleton of a giant model airplane made of rainbow colored inner tubing. The sky was bright blue and I could see a woods in the distance. I found myself talking to a man in a shining white robe who was either shaking my hand, or else holding on to it. It was an amazing hallucination, as I truly believed I was in the meadow. It was not like a dream. After a few moments the desert landscape returned and I slowly went to sleep after an hour or so. I rose early the next morning, feeling no adverse effects.

It is important to again emphasize that quiet and darkness are essential to a complete visionary experience with the *Salvia* infusion. This is probably true with all methods of taking the plant, including smoking the leaves. Only on inhalation of the

vaporized compound may this be unnecessary. Felipe paraphrased his father's explanation of the potion's mechanism of action as follows, " What happens to the soul when one drinks *la María* (their name for the infusion) is that it has so much strength that one is left as if in a faint. And, therefore, a person becomes intoxicated when *la María* enters them, along with the prayers of my father and the words of Christ. It really isn't alcohol, however. You go into a 'delicate (special)' state... At times one becomes half-drunk, but with the result that what they are experiencing will be engraved on their mind." It is obvious that Don Alejandro realized the importance of ritual and expectation to the visionary experience. Speaking out helps fix it in the mind.

During the two sessions, Díaz and I felt mental sensations that included flying, floating, traveling rapidly through space, twisting and spinning, as well as a heaviness or lightness of the body. Physically, we had slurred speech and awkward sentence patterns. We both had a normal pupillary response to a flashlight shined in our eyes by Paul. Díaz later felt a chill that was accompanied by a lowered heart rate. After the sessions were over, and the light was turned on, we were dizzy and stumbled about when we tried to move around. Understanding this effect, Don Alejandro suggested that Paul do the driving. Although we recognized the physical incoordination, we felt that, mentally, we were in combined states of acute awareness and receptive minds. Interestingly, Siebert (1994) noted incoordination at high doses of vaporized and inhaled salvinorin A, but his subjects were extremely confused. The *curandero* spent hours before each session describing what we would see. This had a tremendous influence on my second experience. During this session Díaz mentioned plants and flowers. I then began to see them also. Later, he apologized to Don Alejandro for not seeing what was supposed to appear, especially the saints and other religious figures. As he finished speaking, I saw such imagery. When I described my vision of a castle, Díaz saw one also. The most amazing experience was that which happened to me on my return to the motel. Don Alejandro had described what the visionary journey would be like. I am sure that when I found myself in the meadow, talking to the man in white who fit the description of a saint, I was in the *curandero's* heaven. The hallucination was quite complete, being visual, oral, aural and tactile. Experiences for other ways of taking the leaves or salvinorin A should be similar, only varying in duration and degree of intensity.

Investigators' reports of the effects of chewing a quid, smoking the leaves, or inhaling the vaporized compound, say they last from 30 minutes to 2 hours, peaking at about 1 hour. The second time I took the infusion, made from 50 pairs of leaves, the effects lasted at least 4 hours before I went to sleep. Don Alejandro had said the visions would last all night. When he took the preparation with us, he went outside and vomited. He said this would end the effects. On making the infusion, he noted the head of foam, which indicated it would be quite potent. The Mazatec way of either grinding or crushing the leaves in water is a pharmaceutically elegant way of preparing a microsuspension or emulsion of salvinorin A. This explains the foam on the top of a "good" preparation. It is much more effective than the crude emulsion that was made to dose the mice (this emulsion might serve for oral dosing of the compound, however), for it disperses the compound without an accompanying settling out. Ingesting this infusion, one has visions that last for an extended period of time, as the drug is slowly and regularly released and absorbed through the stomach and gastrointestinal tract. Vomiting, therefore, will remove the remaining infusion and drug from the body, ending the experience. One can also understand why dried leaves aren't used by the Mazatecs. Drying drastically alters the chemical composition of the leaves, and the microsuspension/emulsion of salvinorin A will not be formed. Since salvinorin A is insoluble in water, the dry leaves will not serve to prepare an effective infusion.

From the above, it is apparent that both *S. divinorum* and salvinorin A are prime candidates to become drugs of widespread use once knowledge of their effects spreads. A small investment in fertilizer and solvents, with only a minimal need for mastery of laboratory technique, would make cultivation of *S. divinorum* and isolation of salvinorin A potentially much more attractive than trying to synthesize LSD or phencyclidine derivatives. Smoking the dried leaves, eating the fresh ones, or taking the infusion should not be major problems to treat in the emergency room. However the fraction of a milligram of salvinorin A needed to induce visions can easily lead to problems in measuring out accurate doses. Smoking the compound in the manner of cocaine free base might add to its mystique; being vaporized and inhaled means that the effects are almost immediate. Unfortunately the extreme potency of salvinorin A could readily lead to overdosing and its associated problems, especially as nothing is known about methods of treatment or the compound's metabolism in the body. Using medications might prove to be disastrous. There is a lot of research to be done on *S. divinorum* and its active ingredient.

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"Divinorin C," a New Neoclerodane Diterpene from a Bioactive TLC Fraction of *Salvia divinorum*

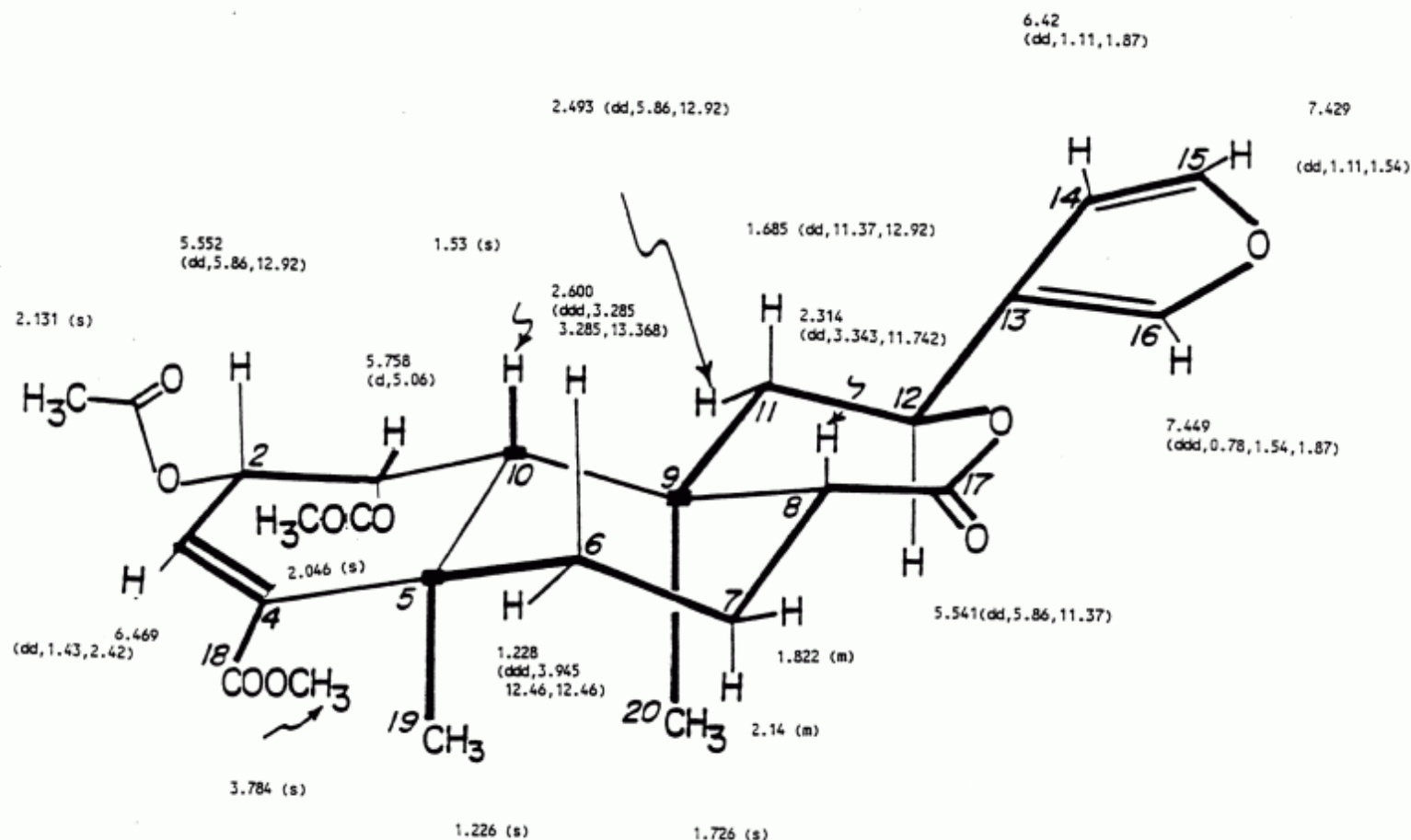
Lab notes from the desk of Leander J. Valdés III

The *Salvia divinorum* Research and Information Center
(Received October 25, 2000)

During our research on *S. divinorum*, salvinorin A was first isolated from a single pharmacologically active preparative TLC band. Differences in potency between the purified diterpene and the original TLC fraction led us to surmise that the latter possibly contained other strongly bioactive compounds which co-chromatographed with salvinorin A during the separation. On changing solvent systems, we found that this "single" TLC band actually consisted of two diterpenes, with salvinorin A as the major component and a new one (1) (tentatively called divinorin C) as the minor one. Even though we estimated that divinorin C comprised only about 10% of the pharmacologically active TLC fraction (the rest being salvinorin A), the fraction was significantly more potent than an equivalent amount of salvinorin A alone. However, since the testing was done using mice, it cannot be stated unequivocally that the new compound is active in humans. The new terpenoid is a diacetate. There is an acetoxy function where salvinorin A has a ketone and a double bond between Carbon-3 and Carbon-4. The compound tended to decompose during the isolation procedure. The attached figure gives the proton nmr assignments, including coupling constants. We also found trace amounts of both possible monoacetates and the diol during our work.

Part of this material was presented at the 20th annual MALTO Meeting in Monroe, LA, May 16-18, 1993.

Involved in this research were: Leander J. Valdés III, Hui-Ming Chang, Dan Visger, and Masato Koreeda.



(1)

The Early History of *Salvia divinorum*

Leander J. Valdés III

[HTML with permission and changes from *The Entheogen Review* (2001) X: 73-75]

Unless you believe that *Salvia divinorum* is the old Mexica (Aztec) narcotic plant *pipiltzintzintli* (I don't), the story of this fascinating mint began in the late 1930s. When R. Gordon Wasson and Albert Hoffman brought back material for Carl Epling to identify (Wasson 1962, 1963; Epling and Játiva-M 1962), they ended a search that had lasted nearly a quarter of a century. Their party traveled through Oaxaca under the auspices of a famous Mexican anthropologist, Roberto Weitlaner (an Austrian by birth), who had been guiding expeditions to Oaxaca for decades (Pompa y Pompa 1966). I've quoted everything relative to *S. divinorum* from each of the following rather rare references, translating to English where necessary.

In the summer of 1938 Jean B. Johnson, Weitlaner's son-in-law, visited the Mazatec town of Huautla de Jiminéz, Oaxaca, with a group of young anthropologists. He wrote a couple of articles based on their findings. The first one covered various aspects of Mazatec culture and language. In the section on curing and witchcraft he discussed the magic mushrooms:

Shamans, as well as other persons, use certain narcotic plants in order to find lost objects. In some cases *teonanacatl* is used, while in others a seed called "semilla de la Virgen" is used. "Hierba María" is similarly used. The Zapotecs use a plant called "bador", the little children, and the Aztecs used narcotic plants in a similar manner (Johnson 1939a).

"Semilla de la Virgen" is "the Virgin's seed," and "Hierba (or Yerba) María" is Mary's herb, both refer to Mary, the mother of Jesus Christ. In the second article Johnson covered the activities of Mazatec shamans in greater detail. It is an excellent and interesting source of information, being based on interviews with a shaman. Concerning the Mazatec trio of magic plants he wrote:

To find a lost animal or object, one takes some mushrooms at night. One commences to speak (after falling asleep). It is not permitted to keep an animal around which might cry out and disturb the sleeper, who goes on speaking while another person listens. The sleeper tells where the lost animal or thing is, and the next day, there it is when they go to find it. In addition to the mushrooms, some people use a seed called "*Semilla de la Virgen*", others use "*Hierba Maria*" ... The use of various magical plants to find lost objects is not restricted to the Mazatec alone; the Zapotec use a plant called "*bador*, the little children," which is administered the same way as *yerba Maria* by the Mazatec. The leaf is beaten well, and a tea is made thereof. It is probable that the Chinantec use it, since it well known to those who live in the vicinity of Ojitlan. The Aztecs used narcotic plants in a similar way (Johnson 1939b).

Bador, or *badoh*, was later identified as the morning glory, *Rivea corymbosa*, and it is the seeds that are used, not the leaves (Wasson 1963). Johnson was killed in Africa during World War II.

Blas P.Reko, like Weitlaner, was an Austrian expatriate. He was a doctor and naturalist, and often worked in collaboration with the anthropologist (Reko 1945; Pompa y Pompa 1966). In his book on medicinal plants, he wrote:

I cannot leave unmentioned here another magical plant whose leaves produce visions and which the Cuicatecs and Mazatecs (of the districts of Cuicatlán and Teotitlán) call "leaf of prophecy." The loose leaves I have obtained do not allow its scientific identification at the present time.

Teotitlán is in the Valley of Oaxaca, in the upper central part of the state. It is Mazatec country. Cuicatlán is the district directly adjacent to the southeast. A search engine such as Google™ can find you some good maps. As an aside, the credit for discovering the magic mushrooms has been given to Richard Schultes (1939), and later R.G. Wasson. Actually, at the time Schultes was in the Sierra Mazateca, working on his PhD thesis (Schultes 1941). He was accompanying Reko, who had been puzzling out the mushroom mystery since 1919. During the late 1930s Reko sent specimens he had collected to various American taxonomists for identification. He later said this about the American botanist:

I have to mention these details, now that an ambitious young Harvard student, having turned literary pirate, has taken credit for my discoveries (The identification of *Teonanacatl*, by Richard E. Schultes, Botanical Museum Leaflets, Harvard University, Febr. 21, 1939), after I had communicated to him the results of my prolonged investigations and invited him on a botanical expedition to Huautla de Jiménez during the summer of 1938, where I gave him numerous samples of the aforesaid mushroom, which had been finally positively identified by Dr. Linder as *Paneolus campanulatus* L. var. *sphinctrinus* (Fr.) Bresadola. Samples that I sent to professor C.G. Santesson in Stockholm revealed the presence of a new narcotic glucoalkaloid.

Schultes never did return to Mexico, and turned his research toward South America.

Weitlaner, himself, was trained and worked for a while as an engineer, but later switched to anthropology after emigrating to Mexico (Pompa y Pompa 1966). He led numerous expeditions throughout Mexico and was an expert on the peoples of Oaxaca. While collecting data on the Chinantecs, he came across a person who gave him a lot of information about Mazatec healing rites, including the use of *Yerba de María*, or *S. divinorum*. The interview covering the mint went as follows:

4. *USE OF PLANTS IN HEALING*

Asking Don S. about the mushroom *Teonanacatl*, which is found in Huautla de Jiménez, he said it wasn't used in Jalapa, but he mentioned another plant that was called *Yerba de María*.

The plant somewhat resembles yerba mora but its leaves are a little wider; only the leaves are used, and they are put in water. First they are rubbed (crushed) in the hands, the water is not boiled, and they are used for very specific means. When the *curandero* goes to the mountain to search for this plant, he has to kneel down and pray to it before cutting it. There are only two or three specialists who know this remedy. They aren't *brujos*, and they cut the plants only when they need them, after praying.

For example, if someone is ill, and the doctors don't know the disease,

then with this herb they can divine the illness. The *curandero* who brings the leaves first asks the sick person if they are addicted to alcohol, for a person who doesn't drink is prescribed fifty leaves, but one who does is prescribed one hundred. The ill one drinks the water in which the leaves have been squeezed; at midnight the *curandero* goes with them and another person to a place where there is no noise, as for example, a house where the sick person drinks the potion. They wait a quarter of an hour for the effects of the drug, and the sick person begins to describe the type of illness they are suffering from. The sick one finds themselves in a semi-delirious state, they speak as if in a trance and the others listen attentively to what they say, they throw off their clothing as if with the herb they could free themselves of the animals. At daybreak the *curandero* bathes the sick person with the same water that they took, and with this they are cured.

It is said that this bath ends the intoxicated state of the sick person who has taken the herb.

When one is trying to uncover a robbery or loss, the *curandero* listens to what the person who has taken the plant says and in this manner the deeds are discovered.

There is a man called Felipe Miranda in Jalapa de Díaz who goes to the mountain every three to six months to collect the herb; he performs excellent cures and he is doing quite well, economically; they say he grows the plant, but he won't reveal what type of herb it is.

Later Weitlaner continued:

It seems odd that the use of the mushroom called *Teonanacatl* was categorically denied, when we know that in the Mazatecan capital of Huautla de Jiménez its esoteric use is very well known. As has been said, here it gives way to the plant known as *Yerba de María*.

Perhaps it may be of interest to point out the fact that a plant called *Yerba de la Virgen* is used in almost the identical manner in the Otomí town of Santa Ana Hueytalpan, in the region of Tulancingo, Hidalgo, according to Dr. J. Soustelle, who learned of it and wrote us. However, he didn't mention an auto-diagnosis as takes place in our Mazatecan town.

Yerba mora is Black Nightshade or *Solanum nigrum*; illness can be physical, psychological or magical. There is a more detailed description of crushing the

Salvia leaves by hand (Valdés et al 1983). Weitlaner's article is excellent reading.

When I was in Mexico City in 1980, I visited the National Herbarium (a place where plant specimens are stored) to look at their collection of *S. divinorum*. I learned that in 1957 the Mexican botanist, Arturo Gómez Pompa, while in the Sierra Mazateca collecting mushrooms for the drug firm CIBA, found a *Salvia* species known by the Mazatecs as *xka Pastora*. He noted that it was hallucinogenic (*alucinante*) and a dose was 8-12 pair of leaves. Flowering material was unavailable (floral description is almost always necessary to define a new species), so it couldn't be identified past the genus level. Unable to return to the area before Wasson and Hofmann's visit, he missed the chance to get the credit for identifying *ska María Pastora* (Gómez Pompa 1957, 2001).

This, then, is what was known about *S. divinorum* before Wasson and Hofmann set out to collect the magic plant. These old articles pose some very important unanswered questions. Reko noted possible use of *S. divinorum* by the Cuicatecs, and Weitlaner by the Otomi. These people live in areas surrounding the Mazatecan heartland, and they as well as the Chinantecs are long overdue for study. These old explorers used horses and mules for their traveling, I used a car and a jeep, but I'm sure that now one could do it all by bus, if they were brave enough (traveling on rural Mexican buses can be a real learning experience).

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Salvia divinorum photos from L. J. Valdes III

Go [here](#) to get to The *Salvia divinorum* Research and Information Center

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There is an old-fashioned way to prepare *Salvia divinorum*. Get a pile of leaves, some water and a shaman.....



Here's Don Alejandro blessing some *S. divinorum* wrapped in a large leaf. He's passing it through copal incense.

Here's a picture of Felipe Vicente, who translated for us in Oaxaca. He is Don Alejandro's son. We are up on Cerro Quemado in a patch of *Salvia divinorum* & he is picking leaves. This is the best way to get "las hojas de la Maria Pastora" (around 1980 - used in the 2nd trip report in our *Salvia* paper - see: "[Ethnopharmacology of Ska María Pastora](#)").



The Absolute Stereochemistry of Salvinorins

Masato KOREEDA,* Lindsey BROWN, and Leander J. VALDÉS III

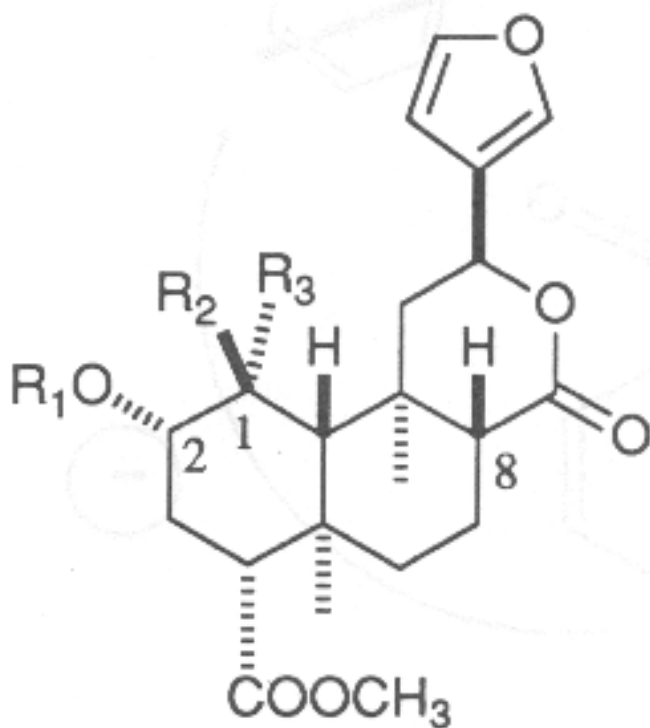
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Chemistry Letters, pp. 2015-2018, **1990**.

The absolute stereostructures of the hallucinogenic diterpenes Salvinorin A and B have been unambiguously determined by the use of the non-empirical exciton chirality circular dichroism method on their 1 α ,2 α -diol dibenzoate derivative.

Recent investigations^{1,2)} of the hallucinogenic Mexican mint *Salvia divinorum*³⁾ have resulted in the isolation of the pharmacologically active diterpene salvinorin (divinorin) A (**1**) and its desacetyl analog salvinorin B (**2**). Extensive ¹H and ¹³C NMR studies on these *trans*-clerodanes^{1,2)} and their derivatives,²⁾ as well as single-crystal X-ray analysis,^{1,2)} have led to the formulation of the structures of these compounds. The absolute chemistry of the salvinorins was postulated based on the observed negative n $\rightarrow$ π^* Cotton effect of the 1-ketone around 295 nm in their circular dichroism (CD) spectra.^{1,2)} While this assignment had appeared to be corroborated by the n $\rightarrow$ π^* Cotton effect of isofruticolone,⁴⁾ the ambiguous nature of the approach associated with this empirical CD method necessitated an independent, unequivocal verification of the absolute stereochemistry. In the following, we delineate the unambiguous assignment of the absolute stereochemistry of these physiologically important diterpenes through the use of the non-empirical exciton chirality CD method.⁵⁾



- 1** $R_1 = \text{Ac}, R_2 = R_3 = \text{O}$
2 $R_1 = \text{H}, R_2 = R_3 = \text{O}$
3 $R_1 = R_2 = \text{H}, R_3 = \text{OH}$

In an effort to obtain a salvinorin derivative possessing an α -diol system which can be transformed into the dibenzoate ester required for the exciton chirality CD method, salvinorin A (**1**) or B (**2**) was treated with sodium borohydride in various protic solvents. The products having the $1\alpha,2\alpha$ -diol group were obtained in high yield. However, this reduction was accompanied by extensive isomerization at C-8. While mechanistic details for this unexpected observation remain to be established at this time, the isomerization at C-8 appears to be the result of the base-promoted cleavage of the C-8/9 bond under the reaction conditions followed by the reclosure to provide the 8-epimer prior to the reduction of the 1-ketone. Furthermore, attempts to obtain the 1,2-dibenzoate derivative of the major reduction product **3** under various benzoylating conditions invariably produced only the 2-monobenzoate.

Since it was deemed desirable to remove possible interaction between the benzoate and the furan chromophores for the unambiguous CD analysis, salvinorin A (**1**) was reduced under catalytic hydrogenation conditions, providing the hexahydro derivative **4** (a 2:1 epimeric mixture at C-13) after esterification with diazomethane and desacetylation with KCN/MeOH.⁶⁾ Interestingly, ester **4** was found to be relatively stable towards configurational isomerization at C-8. Thus, reduction of **4** with NaBH_4 in EtOH produced cleanly the *cis*- $1\alpha,2\alpha$ -diol **5** in 81% yield. The benzoylation of the 1α -hydroxyl group in **5**, which is surrounded by the two 1,3-diaxially juxtaposed methyl groups, proved to be quite difficult under the standard benzoylation conditions. However, treatment of **5** with trimethyl orthobenzoate at 100°C in the presence of a catalytic amount of benzoic acid followed by acid-catalysed hydrolysis of the resulting 1,2-cyclic orthobenzoate provided the 1-monobenzoate derivative of **5**.^{7,8)} Benzoylation of this monobenzoate under standard conditions afforded the desired 1,2-dibenzoate **6**.⁹⁾ in 95% yield. Alternatively, treatment of diol **5** with benzoyl trifluoromethanesulfonate (BzOTf)¹⁰⁾ resulted in the direct formation of **6** in 50% yield.

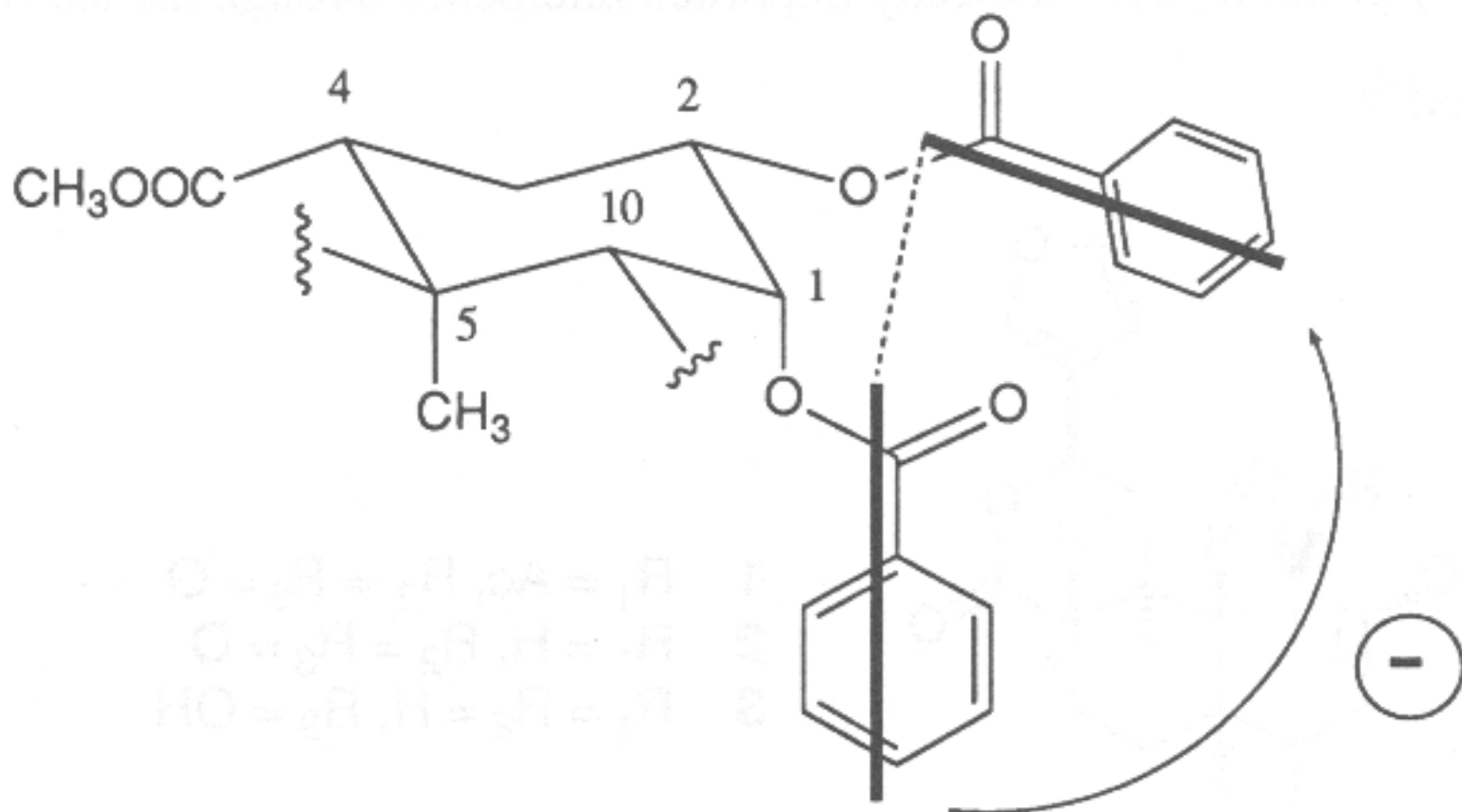
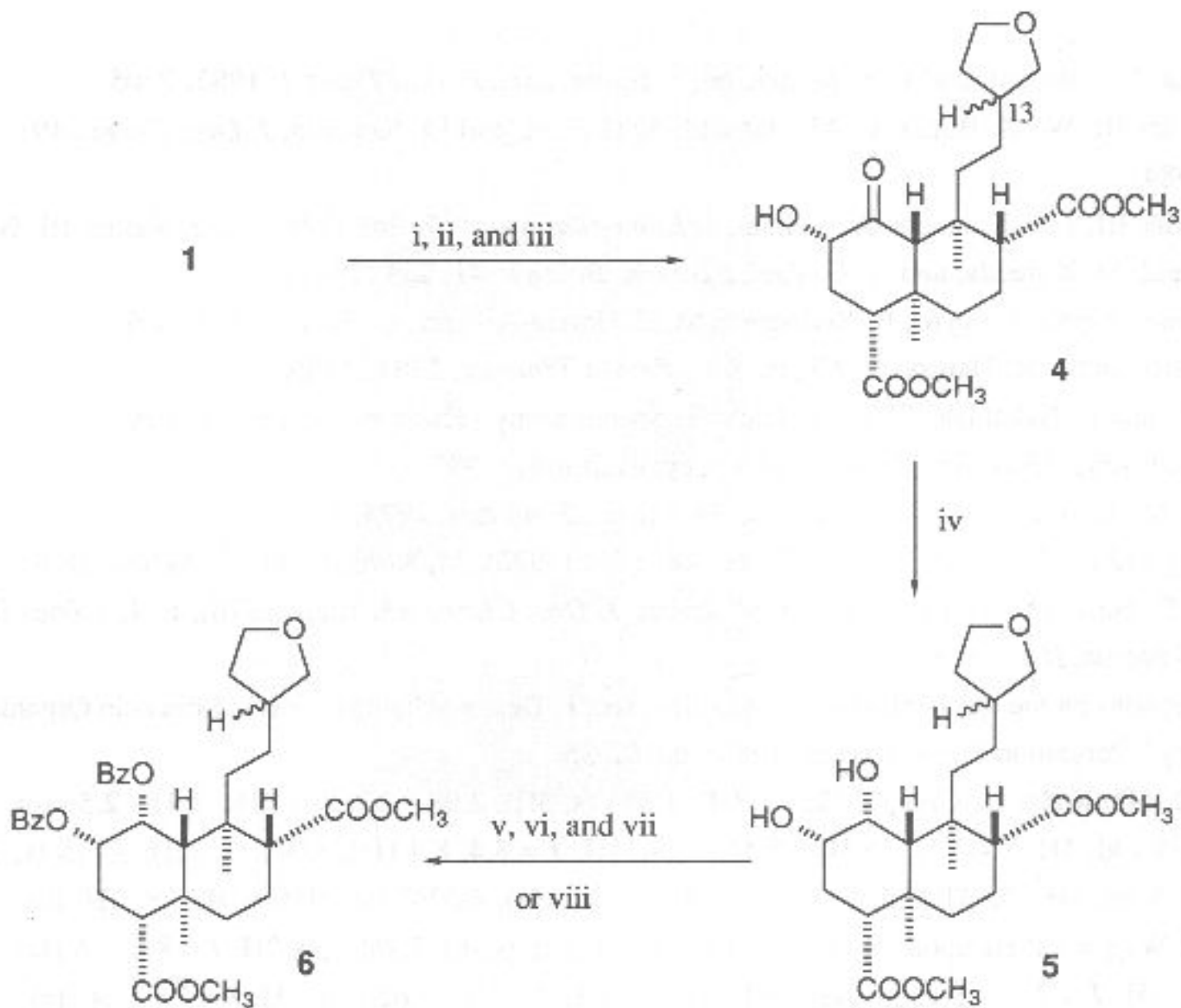


Fig. 1. The negative chirality between the two benzoate electric transition dipoles of the 1,2-dibenzoate derivative **6**.



Scheme 1. *Reagents and conditions*: i, H₂, 5% Pd/C/MeOH, 14 h; ii, CH₂N₂/MeOH, 0°C, 2 h; iii, KCN (3.0 equiv.)/MeOH, reflux, 15 min [74% yield for **1** → **4**]; iv, NaBH₄ (5.0 molar equiv.)/abs. EtOH, 0°C → room temperature, 12 h (81%); v, PhC(OMe)₃ (excess), PhCOOH (catalytic), 100°C, 1 h; vi, THF/water/AcOH (15/5/1), conc. HCl (2 drops) (65% yield for v and vi); vii, BzCl (excess)/pyridine, room temperature, 2 h (95%); viii, BzOTf (5 equiv.), pyridine (7.5 equiv.)/CH₂Cl₂, -78°C → room temperature, 1 h at room temperature (50%).

The CD spectrum of the 1,2-dibenzoate **6** in 9:1 MeOH/dioxane showed a pair of typical exciton-split Cotton effects with opposite signs centred upon the UV absorption (227 nm) of the benzoate chromophore: $\Delta\epsilon_{235.5}$ -15.9 and $\Delta\epsilon_{221.5}$ +6.66. The negative longer wavelength Cotton effect clearly defines the negative chirality between the two electric transition dipoles of the benzoate chromophores

assignable to the long axis $\pi \rightarrow \pi^*$ transitions (Fig. 1),⁵⁾ thus unequivocally assigning the absolute stereostructures of salvinorin A and B as given in **1** and **2**, respectively.

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(Received August 6, 1990)



Sadly, due to the untimely death of the author, this book is no longer in print.

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The most powerful natural psychedelic known has recently been isolated from a rare Mexican sage, *Salvia divinorum*. The active compound, SALVINORIN A, has astonished users and researchers with its dramatic and intense psychoactive effects, which are quite distinct from those of other psychedelics. Early experiments with salvinorin A have shown diverse results, ranging from alarming intensity and terror, to experiences of exquisite feelings and insights, transformative and healing energies, and bizarre physical/geometric dimensions.

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D.M. Turner is a psychedelic researcher and author of The Essential Psychedelic Guide.

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Salvia divinorum* Epling et Játiva-M. (Labiatae): An Ethnopharmacological Investigation*Sherry A. Rovinsky, Biology****Gerald R. Cizadlo, Ph.D., Department of Biology****ABSTRACT**

Salvia divinorum is a vision-inducing and medicinal plant of Mexico. It contains an unidentified acetone-soluble compound(s) which inhibits the growth of rod-shaped bacteria on starch agar. Preliminary testing also indicated that a water-soluble compound(s) in *S. divinorum* slowed the frequency and increased the duration of phasic contractions in the duodenal smooth muscle of mice.

Introduction

Salvia divinorum Epling et Játiva-M. (Labiatae) (also called *Ska Pastora*, *Ska María Pastora*, *hierba María*, *hojas de la pastora*, *hojas de María Pastora*, or *yerba de María*) is a somewhat rare Mexican plant which has been traditionally used in Mazatec healing ceremonies (1). The divinatory uses of this plant are well documented (1,2,3). While its origin and medicinal applications are not well known, the few available articles suggest some interesting possibilities. Infusions of the plant are used for a variety of complaints: diarrhea, headache, rheumatism, anemia, and *panzón de barrego*, a magical disease of the Mazatecs (1). The Mazatecs consider it a panacea (1). The purpose of this study is twofold: first, to determine if the plant produces antimicrobial compounds, and second, to create a methodology for measuring its effects on gastrointestinal motility in mice.

Literature Review**Historical Background**

Few references to *S. divinorum* can be found in the literature and those are often vague or incomplete. In 1938, anthropologist J. B. Johnson wrote that an infusion of a plant called "hierba María" produced visions in its users (4). B. P. Reko, a medical doctor with an interest in anthropology and ethnobotany, later collected some of this mysterious leaf, but could not identify it (5). In 1952, anthropologist Weitlaner wrote "*Curaciones Mazatecas*," in which he described a healing ceremony where *S. divinorum* was used (6). In 1955, banker R. Gordon Wasson and chemist Albert Hofmann met the Mazatec shaman María Sabina and this single interaction provided most of the original information about *S. divinorum* (7). During this visit, Wasson and Hofmann obtained a living sample of the plant, which they turned over to botanist Carl Epling (8). Epling and Carlos Játiva later classified it as a distinct species of the *Salvia* genus (9).

No one knows where this strange member of the Labiatae or Lamiaceae (mint) family originated. Some of the Mazatecs believe that *S. divinorum* is foreign to their region (10). In his 1963 paper, R. Gordon Wasson suggested that *S. divinorum* may be *pipiltzintzintli* (Nauhatl for "the most noble prince" (11)), a magical Aztec plant whose identity is unknown (10). However, Díaz suggests that *S. divinorum* was actually a post-conquest addition to the Mexican flora and therefore cannot be this ancient Aztec sacrament (3). Indeed, Mazatec names for *S. divinorum* seem to be rooted in Christian mythology. For example, it is often referred to as *Ska María Pastora*, or the leaf of Mary the Shepherdess (1) because visions of a woman are a common effect (12). Of course, as Ott points out, Mary is not generally thought of as a "shepherdess" by Christians (13). There are no indigenous names for *S. divinorum* and Ott explains that the Mazatecs know very little about the use of this plant, citing their mistaken belief that the leaves are no longer psychoactive once dried (3). Instead, Díaz suggests that *Pipiltzintzintli* is actually *Cannabis sativa* (14), although today it is generally recognized that *Cannabis* was a post-conquest addition to the New World. Ott ultimately concluded that wherever *S. divinorum* came from, it was probably not introduced by the Europeans (3).

According to the Mazatecs, *S. divinorum* is the most important in a "family" of plants which are all of the Labiatae family. This "family" has great religious significance and includes *S. divinorum*, *Coleus pumila*, and two forms of *C. blumei*. They are referred to by the natives as *la hembra* (the female), *el macho* (the male), *el nene* (the child), and *el ahijado* (the godson), respectively (15).

Botany of *Salvia divinorum*

S. divinorum is a perennial herb which grows to a height of 50 to 150 cm. The stems are quadrangular and hollow in cross-section, and the

leaves have an opposite arrangement. Today, forest ravine areas in the northeastern Sierra Mazateca mountains in Oaxaca are the only known locations where the plant grows naturally. During the winter of 1984, Reisfield found 15 different populations of *S. divinorum* in his field work. However, since the plant is easily propagated through cuttings, it is now cultivated in various parts of the United States, preferring sites with indirect light and high humidity. It is assumed to be a hybrid, although its two parent species remain mysteries (16).

The flowers of *S. divinorum* have been the focus of some past confusion. The flowers have white corollas and purplish calyces (1). In Epling's 1962 botanical description of *S. divinorum*, he mistakenly describes it as having blue corollas (9). He had never seen living flowers, and his statement was based on Hofmann's description of "blue flowers crowned with a white dome" (16) which were actually flowers that had blue calyces and unopened white corollas. The mistake was eventually discovered and corrected by other researchers when the specimen Epling was cultivating bloomed (1).

The viability of seeds produced by *S. divinorum* is questionable. It is apparently a self-sterile plant which will produce seed only when cross-pollinated (1). Valdés pollinated fourteen flowers and four produced seeds. Unfortunately, the seeds' viability could not be assessed as they were accidentally killed when a growth chamber overheated (1). Generally, this plant is reproduced by cuttings. It is a diploid species (N=11) whose pollen grains are not as viable as those of other *Salvia* species. Out of 3027 pollen grains, Reisfield found that 53% aborted, although this fact alone does not explain why the plants do not set seed in Mexico (16). Even when *S. divinorum* is hand pollinated, only 2 to 3 percent of the nutlets fully mature (8).

Valdés had difficulty with insect infestations within the greenhouse. His plants suffered whitefly and *Tetranychus urticae* infestations, but when they were taken outside, wind and rain prevented these infestations (1).

Valdés' botanical experiments indicated that the flowering of *S. divinorum* is controlled by day length. Long nights (12-13 hours) stimulate bloom formation. Flowering is not dependent on tapering of day length; either a gradual or abrupt decrease (from 16 to 11 hours) will cause the plant to flower (17). Valdés also noted that increasing the day length to greater than 12 hours once flower buds had formed caused the blossoms to abort and vegetative growth to resume (1). Plant height is only a minor factor in flowering (17).

Traditional Mazatec Medicinal Uses

There is little information in the literature about medicinal uses of *S. divinorum*, but there are many instances throughout the world where other *Salvia* species are used medicinally (1, 11, 14, 18). In fact, the genus name *Salvia* itself comes from the Latin word *salvare*, which means "to save." Customarily, the natives talk about dosages of *S. divinorum* in pairs of leaves (1). Infusions of the plant are most commonly used (1,3), but it has also been used in water as a poultice (3) and sometimes the patient is bathed in the infusion (3).

Leander Valdés learned about its medicinal uses from the Mazatec shaman Don Alejandro. When taken in small doses (4 or 5 pairs of leaves in a tea) it is useful as a "tonic or panacea." This infusion may be taken by the glass or teaspoonful as needed. Specifically, it is used for the regulation of defecation and urination and reputedly stops diarrhea. It is also used for rheumatism and headache, although higher doses may actually produce headache. Valdés writes, "It is given to the sick, old or dying to revive them or alleviate their illness. People who are pale, white and almost ready to die (they have 'anemia') may recuperate on taking *la María*" (1).

Its most mysterious use is as a cure for a disease called "*panzón de barrego*." According to the Mazatecs, this disease is caused by the curse of a *brujo* (sorcerer). The victim's abdomen swells up like a sheep's belly (hence the name) due to a "stone" the *brujo* has placed there. The identity of this affliction is unclear. Taking *Salvia* eliminates the "stone," and the abdomen shrinks down to its original size. An old shaman showed Valdés his wrinkled abdomen, indicating that he had been afflicted with the "shaman's curse" and had been cured with *S. divinorum*. Don Alejandro confirmed the shaman's story (1).

Valdés participated twice in *Salvia* ceremonies, ingesting an infusion made of 50 pairs of leaves. He and his party reported sensations of "flying or floating and traveling through 'space,' twisting and spinning, heaviness or lightness of the body and 'soreness,'" (1) dizziness, and lack of coordination (1). The speech of the subjects was slurred and contained "awkward sentence patterns" (1). One man had a decreased heart rate and chills. When light was shined into the subjects' eyes, pupillary response was normal (1). In a later paper, Valdés described the effects as "astounding visual, oral/aural, and tactile hallucination" (17).

Valdés' brief description of the disease *panzón de barrego* (1) suggested that the disease may be a parasitic infection in which lymphatic blockage occurs. Another possibility is that this disease may affect capillary fluid dynamics in such a way that filtration is increased and ascites occurs. Also, its folk use for diarrhea suggested that it might either inhibit bacterial infections or act directly on the smooth muscle of the intestinal tract, thereby decreasing gastrointestinal motility. However, since there is no information on the speed of action and symptoms of *panzón de barrego*, any conclusion is premature.

Mazatec shamans primarily use *S. divinorum* as a vision-inducing plant. They say it "allows them to travel to heaven and talk to God and the Saints about divination, diagnosis, and healing" (19). Although the plant is reputed to be only "weakly psychotropic," (1) it can produce very powerful visions under the correct circumstances. Rituals are performed to heighten the experience, and darkness and silence are essential for achieving full psychoactivity. Valdés writes "...if the experience becomes too terrifying, it can be readily terminated by saying a few words or producing a light." Dosages of at least 20 pairs of leaves are necessary for psychoactive effects (1). Although its traditional use is as a hallucinogen, the Mazatec shamans only use it when morning glory seeds and *Psilocybe* mushrooms are unavailable (20). The Mazatecs generally prepare fresh leaves for an infusion by crushing them in water. This apparently forms a microsuspension or emulsion of salvinorin A (and possibly other non-water-soluble psychotropic agents) (1). The dried leaves cannot be used in this manner, as drying changes the chemical composition of the leaves (19).

There are a variety of other physical symptoms that occur upon ingestion of *S. divinorum*. Hyperthermia occurs with some subjects (8), and this researcher has spoken to others who experience diaphoresis and chills. According to Wasson, the Mazatec Indians often vomit when they ingest the leaves of *Ska Pastora* (15), but others report that nausea is very rare and that it is simply the act of swallowing the leaf material that stimulates the gag reflex (8).

Compounds isolated from *Salvia divinorum*

Salvia divinorum is a source of several pharmacologically interesting compounds. Non-nitrogenous diterpenes (salvinorins A and B) have been isolated from *Salvia* (1,14). Two separate groups isolated salvinorin A, a furanolactone neoclerodane diterpene, from dry leaves, each independently establishing the structure from X-ray crystallography (21,22). Salvinorin B is the inactive desacetyl derivative of salvinorin A (19). (When Valdés isolated these compounds, he named them divinorins A and B, respectively. However, as the Ortega group preceded Valdés in publication, the proper names for these compounds are salvinorins A and B.) Valdés noticed that there were at least two other terpenoids in his extracts (17). Díaz reported the presence of alkaloids in *S. divinorum* (14), but the Valdés group was unable to isolate any alkaloids (23). Valdés isolated Lolilolide, a natural ant repellent, from *S. divinorum* (24). Jonathan Ott recently attempted to obtain thujones with steam distillation, but was unsuccessful (3).

Other species in the *Salvia* genus have been shown to contain antimicrobial compounds. For example, *Salvia sclarea* was shown to contain various compounds which were active against *Staphylococcus aureus*, *Candida albicans*, and *Proteus mirabilis* (25), suggesting the possibility that *S. divinorum* might be a source of unique antimicrobials as well.

Pharmacological Investigations

Valdés completed a variety of animal experiments in order to determine the psychoactivity of *S. divinorum*, particularly salvinorin A. *Homo sapiens* were excluded as test subjects. Since salvinorin A is insoluble in water, he dissolved it in corn oil and Tween-80, a surfactant. He then added water to form an emulsion which settled easily (23).

He attempted to test his aqueous infusion of extract using the Rat FR4 behavior model. Calculating the human dose to be 0.126 g/kg, he gave the rats oral dosages of 10 times and 32 times the human dose (1.26 g/kg and 4.03 g/kg). There was no disruption of FR4 activity or normal behavior. One of his test animals was killed due to the large volume of extract necessary. Due to financial constraints, he abandoned this part of the experiments (1).

He then used a modified extract of reduced volume to test in the cat limb-flick model. Injection of his crude extraction caused kidney failure (anuria) in his cats, one of which died as a result. The survivors developed sterile abscesses at their injection sites. Valdés speculated that the toxicity of his preparation may have been due to its high tannin content. When he modified the preparation to remove the tannins, he administered a subcutaneous injection of it to two cats, using a dosage of 15.16 mg/kg (100 times the human dosage). He observed that the cats panted and foamed at the mouth, but he did not observe limb-flick, nor any of the other "emergent behaviors" that are sometimes observed in cats under the influence of hallucinogens. He administered another subcutaneous injection to a different test animal, this time using a dosage of 85.75 mg/kg which is 635 times the human dosage. This cat became intoxicated within five minutes, cried, and had a decreased respiratory rate and depth. The cat exhibited nystagmus, lack of coordination, and impaired placing reflex. It still had impaired motor function after 24 hours, but had recovered after 36 hours. His control animals did not exhibit these symptoms. Valdés was limited by the amount of extract he could obtain for these experiments and decided to use mice, which require significantly smaller doses (1).

Valdés used the Horizontal Screen test to determine the level of motor function impairment in mice. His preparation was only slightly active, although the mice appeared to be extremely sedated. Activity in this test seemed to be closely related to toxicity. From these experiments, Valdés calculated the ED50 to be 240 mg/kg and the LD50 at 340 mg/kg (1).

Using Hall's Open Field test, Valdés administered purified salvinorin A intraperitoneally to mice. He modified the test so that it could be

used with mice instead of rats and he increased the time of observation. He recorded squares entered, rearings up on hind legs, and length of immobility. Valdés concluded that his purified salvinorin A was not as active as the TLC fraction that had contained it and suggested that there may be another compound(s) in *S. divinorum* which would increase or potentiate the effects of salvinorin A. Doses as low as 10 mg/kg decreased all three measures of activity. Salvinorin A had a "sedating" effect on the mice, but salvinorin B had no effect in this bioassay (1).

Although Valdés was able to extract pure salvinorin A from the leaves of *S. divinorum*, he could not determine with certainty that it is a psychoactive compound (1). Daniel Siebert later isolated salvinorin A in the same manner as Valdés and administered it to 20 human subjects, demonstrating that it is indeed the major psychoactive component. When the leaves or extract were quickly swallowed so that little contact with the oral mucosa was allowed, there were no noticeable effects. However, when the material was kept in contact with the oral mucosa, all of Siebert's volunteers reported psychoactivity. He suggested that salvinorin A is deactivated by the human gastrointestinal system (2). Ott disagrees, saying that this conclusion is premature, owing to the relatively low dosage utilized by Siebert in his bioassays (3). Siebert also found that the strongest psychoactive effects were produced when pure salvinorin A was vaporized and inhaled by test subjects (2). Valdés ultimately concluded that salvinorin A, the first documented diterpene hallucinogen, was the most potent naturally occurring hallucinogen, effective in dosages as low as 200 to 500 mcg (23).

Siebert describes a variety of psychoactive effects of salvinorin A. He writes, "people report having seen visions of people, objects, and places....out of body experiences are frequent. Occasionally individuals get up and move about with no apparent awareness of their movements or behavior. Some individuals speak gibberish during the most intense phase of the experience, others laugh hysterically." The experience of the subjects varied widely depending on dosage, set, and setting (2).

Based on bioassays, Valdés concluded that salvinorin B was not a psychoactive compound. However, this apparent lack of activity may have been due to the fact that it would be less likely to cross cell membranes because of its lower fat solubility. Also, he suspected that his emulsion was inadequate, saying that salvinorin B may be active if it were vaporized and inhaled by the test subject (19).

NovaScreen™ receptor site screening on salvinorin A (concentration = 10⁻⁵ M) showed no significant inhibition for various receptor sites tested (2). The receptor sites investigated are listed in Table 1.

Method

Dried *S. divinorum* leaves were obtained from Kava Kauaii (Hawaii). To test for antimicrobials, two crude extractions of dried, powdered *Salvia divinorum* leaf were made. For the first extraction, 100 ml hot distilled water was used to extract 5.016 g dried leaf. Water was heated to 95 degrees Celsius and temperature of the leaf-water mixture maintained for 15 minutes. Filtering yielded 18.5 ml brown fluid. In the second extraction, 4.113 g leaf was extracted at room temperature with 25 ml acetone producing 14.0 ml of a deep, bright green solution. This mixture was diluted with an equal volume of distilled water. The control solution consisted of equal volumes of acetone and distilled water.

These crude extracts were then used in a standard disc-diffusion method (26, 27, 28) against 18 test organisms. Each disc was impregnated with 0.02 mL of the appropriate extract or control and tested against an organism plated on starch agar. The organisms tested were *Alcaligenes faecalis*, *Bacillus brevis*, *B. cereus*, *B. polymyxa*, *B. subtilis*, *Citrobacter freundii*, *Enterobacter aerogenes*, *Escherichia coli*, *Micrococcus luteus*, *M. roseus*, *Proteus mirabilis*, *P. vulgaris*, *Pseudomonas aeruginosa*, *P. fluorescens*, *Serratia liquefaciens*, *Staphylococcus aureus*, *S. epidermidis*, and *Streptococcus lactis*.

To measure the effect of *S. divinorum* on smooth muscle, 1 inch segments of duodenum were removed from non-fasted common mice (N = 5). Each segment was immersed in Tyrode's solution and connected to a Lafayette™ 76613 force transducer as shown in figure 1. The force transducer was connected to a Lafayette™ 76406TMG minigraph to record the frequency and strength of contractions. 10.033 g *S. divinorum* was extracted with 400 ml Tyrode's solution at 95 degrees Celsius for 15 minutes, yielding 237 ml of a brown solution. Some of this extract was diluted with an equal volume of Tyrode's solution. The Tyrode's compartment was warmed continuously in a water bath at 37 degrees C and was alternately flushed with 100% *S. divinorum* extract, 50% *S. divinorum* extract, and Tyrode's solution. Controls were produced by similar extractions of *Laurus nobilis*. 5.010 g *L. nobilis* leaves were extracted with 200 ml Tyrode's solution, yielding 141 ml dull yellow solution.

Findings

The water-soluble components of *S. divinorum* did not contain antimicrobials. In *P. aeruginosa*, very slight inhibition of growth of about 1 mm occurred around the edges of the disc. There was no visible inhibition of any of the other test organisms.

The acetone extraction contained components which inhibited growth of certain bacteria. Control discs did not inhibit growth of test

organisms. Results of this experiment are given in Table 2.

The antimicrobial effects of the acetone extraction did not depend on gram staining characteristics. *A. faecalis* and *P. fluorescens* are gram negative organisms, and the extract had no effect. However, it inhibited the growth of the gram negative organisms *C. freundii*, *E. coli*, and *P. aeruginosa*. Conversely, the solution had no effect on *M. luteus*, *S. aureus*, *S. epidermidis*, and *S. lactis*, although it did inhibit the growth of another gram positive organism, *B. subtilis*.

The morphology of the microbe did affect the result. Gram negative and gram positive cocci were in all cases unaffected by the acetone extract. However, gram positive, negative, and variable rods were either inhibited or slightly inhibited. The rods *B. cereus*, *P. fluorescens*, and *E. aerogenes* were the exceptions. Figure 2 shows the division of rod-shaped species into families and their sensitivity to *S. divinorum* extract.

The effect of *S. divinorum* on duodenal smooth muscle is not clear, although the extract appears to decrease the frequency of phasic contractions while increasing their duration. Typically, contractions occurred approximately once every two seconds when the muscle was bathed in pure Tyrode's solution. However, when bathed in 100% *S. divinorum* extract, contractions appeared to stop completely. When flushed with Tyrode's solution, the muscle recovered almost completely. When the duodenum was bathed in 50% *S. divinorum* extract, the muscle would contract for approximately 15 seconds, relax for about 2 seconds, and then contract again. By comparison, when the muscle was bathed in extract of *L. nobilis*, the muscle would stop contracting and would not recover when flushed with Tyrode's solution. Figure 3 shows the tracings produced from a single strip of duodenal smooth muscle treated with *S. divinorum*.

Discussion and Conclusion

Agar diffusion is an excellent method to quickly determine anti-microbial properties, but has a few sources of error. Among them is [1] clerical error in recording data, [2] reader error in measuring zone diameters, and [3] contamination or changes in the bacterial strain being tested (27). Also, agar diffusion may not give an accurate picture of the effectiveness of an antibiotic within a living organism. Microbes may show *in vitro* sensitivity to an antibiotic, with little or no sensitivity to it *in vivo* (29).

Our preliminary testing with duodenal smooth muscle produced variable results. In three of the mice tested, 15 to 20 second contractions were recorded, but in two, this result could not be reproduced. This may have been due to problems with the measuring equipment. At times, the muscle was visibly contracting, yet produced no tracing. Also, a larger sample size is necessary for statistical analysis.

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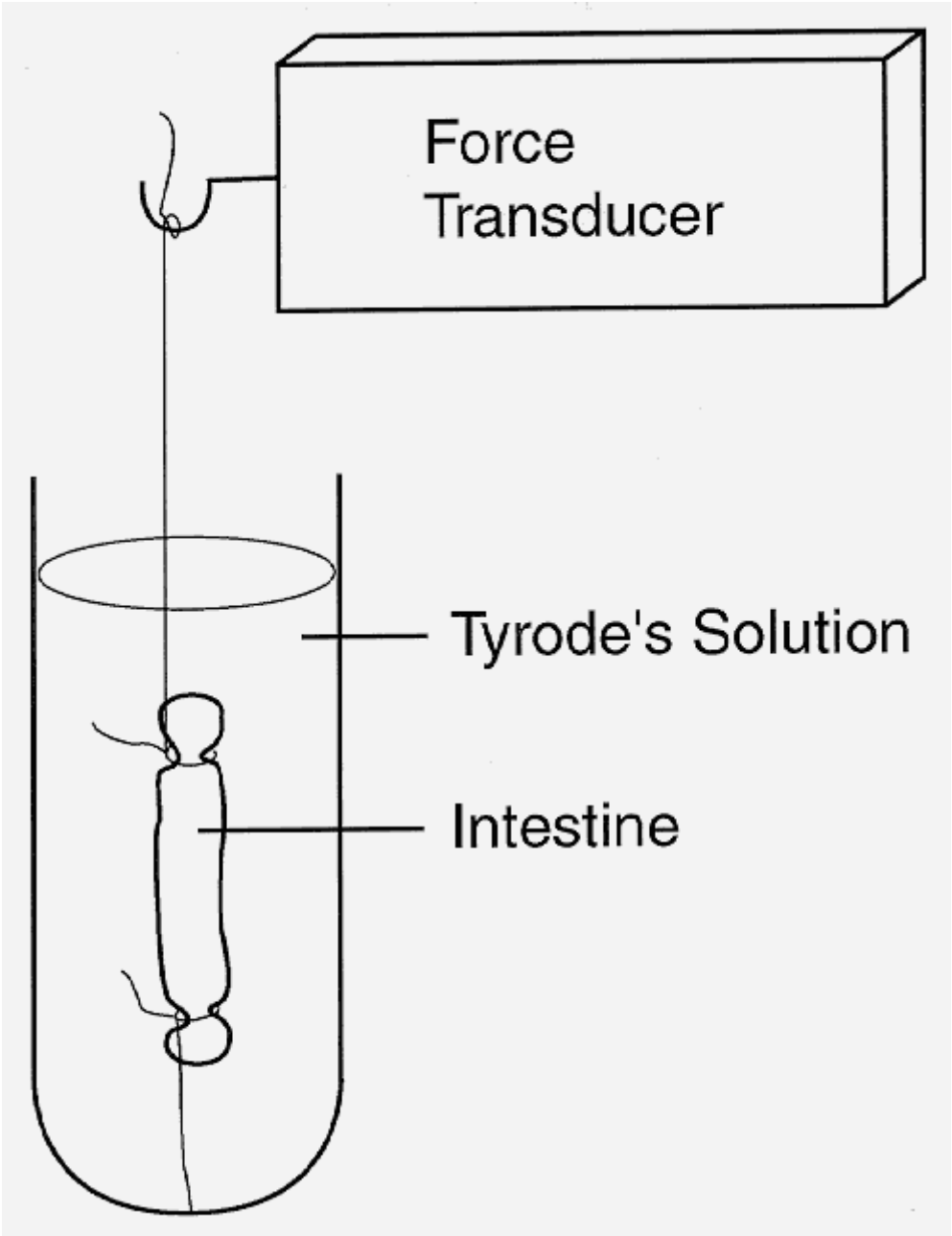
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Table 1: Receptor sites tested for salvinorin A inhibition

Category	Sites Tested	Sites Tested	Sites Tested
Neurotransmitters	adenosine alpha 1 alpha 2 beta dopamine 1	dopamine 2 GABAA GABAB serotonin 1 serotonin 2	Muscainic 3 NMDA Kainate Quisqualate Glycine (stry sens.)
Regulatory sites	Benzodiazepine(centrl) glycine (stry insens.)	PCP	MK-801
Brain/gut peptides	angiotensin Ty2 argvasopressin V1 bombesin CCK peripheral	substance P substance K NPY Neurotensin	Somatostatin VIP
Growth factors and peptides	AN1	EG	NGF

Ion channels	calcium (type N) calcium (type T and L)	Chloride	Potassium (low conduct).
Second messengers	forskolin	phorbol ester	Inositol triphosphate
Monoamine oxidase inhibition	monoamine oxidase A	monoamine oxidase B	

Table 1: Receptor sites tested for salvinorin A inhibition (2).



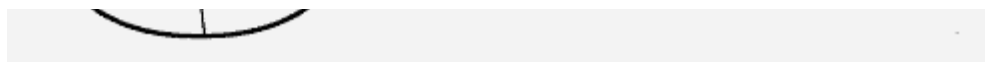


Figure 1: The muscle testing apparatus used to measure duodenal smooth muscle motility.

Table 2: Zone of Inhibition Diameters for Acetone Extraction

Organism	Average size of zone (mm)	Standard deviation: σ (mm)	Zone diameter range* (mm)
<i>Alcaligenes faecalis</i>	0.0	NA	NA
<i>Bacillus brevis</i>	9.6	0.52	1.7
<i>Bacillus cereus</i>	0.0	NA	NA
<i>Bacillus polymyxa</i>	9.7	0.45	1.7
<i>Bacillus subtilis</i>	10.0	0.57	1.9
<i>Citrobacter freundii</i>	9.4	0.61	2.2
<i>Enterobacter aerogenes</i>	0.0	NA	NA
<i>Escherichia coli</i>	8.9	0.53	1.6
<i>Micrococcus luteus</i>	0.0	NA	NA
<i>Micrococcus roseus</i>	0.0	NA	NA
<i>Proteus mirabilis</i>	Slight inhibition**	NA	NA
<i>Proteus vulgaris</i>	Slight inhibition**	NA	NA
<i>Pseudomonas aeruginosa</i>	9.3	0.49	1.3
<i>Pseudomonas fluorescens</i>	0.0	NA	NA
<i>Serratia liquefaciens</i>	9.6	0.33	1.0
<i>Staphylococcus aureus</i>	0.0	NA	NA
<i>Staphylococcus epidermidis</i>	0.0	NA	NA
<i>Streptococcus lactis</i>	0.0	NA	NA

Table 2: Zones of inhibition (N=10)

*Zone diameter range is defined as the difference between the largest and smallest zone diameters.

**Slight inhibition means that the zone of inhibition was cloudy, irregular, and unmeasurable.

***Control discs for all organisms showed no inhibition.

Rod-Shaped Bacteria Tested

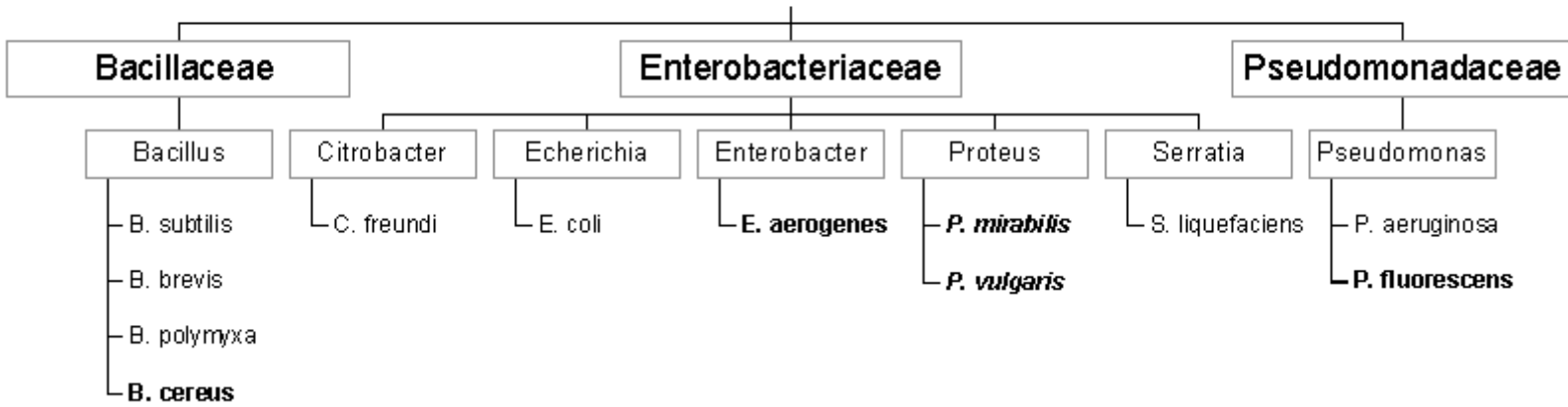
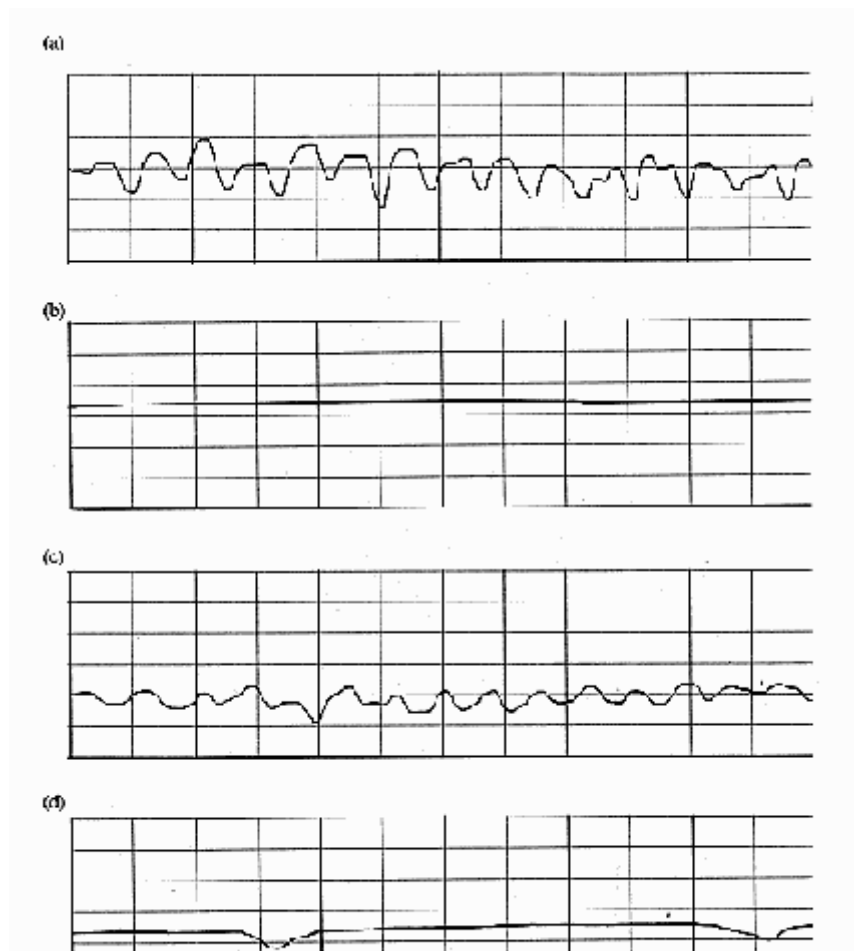


Figure 2: Bacterial species which were inhibited are shown in normal type. Those that were not inhibited are shown in **bold type** and those which were slightly inhibited are shown in ***bold italics***.



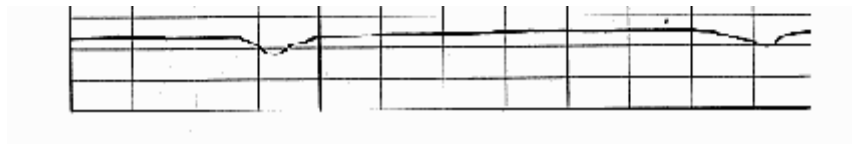


Figure 3: Tracing (a) shows the contractions of the duodenal muscle before treatment with *S. divinorum*. In (b), the Tyrode's solution has been replaced with 100% *S. divinorum* extract, prepared as described in methods. Tracing (c) shows the partial recovery of the muscle after the chamber has been flushed with Tyrodes. In (d), 50% *S. divinorum* extract replaced the Tyrodes solution. One division = 0.1 g tension. Paper speed is 5 mm/sec.

The Mushrooms of Language

by Henry Munn

(This site is created and maintained by [Daniel Siebert](#))

The Mazatec Indians, who have a long tradition of using the mushrooms, inhabit a range of mountains called the Sierra Mazateca in the northeastern corner of the Mexican state of Oaxaca. The shamans in this essay are all natives of the town of Huautla de Jimenez. Properly speaking they are Huauteccans; but since the language they speak has been called Mazatec and they have been referred to in the previous anthropological literature as Mazatecs, I have retained that name, though strictly speaking, Mazatecs are the inhabitants of the village of Mazatlan in the same mountains.

(1) HENRY MUNN has investigated the use of hallucinogenic plants among the Conibo Indians of eastern Peru and the Mazatec Indians of the mountains of Oaxaca, Mexico. Although not a professional anthropologist, he has resided for extended periods of time among the Mazatecs and is married to the niece of the shaman and shamaness referred to in this essay.

from: *HALLUCINOGENS AND SHAMANISM*,
edited by Michael J. Harner. © 1973 by Oxford University Press.

The Mazatec Indians eat the mushrooms only at night in absolute darkness. It is their belief that if you eat them in the daylight you will go mad. The depths of the night are recognized as the time most conducive to visionary insights into the obscurities, the mysteries, the perplexities of existence. Usually several members of a family eat the mushrooms together: it is not uncommon for a father, mother, children, uncles, and aunts to all participate in these transformations of the mind that elevate consciousness onto a higher plan. The kinship relation is thus the basis of the transcendental subjectivity that Husserl said is intersubjectivity. The mushrooms themselves are eaten in pairs, a couple representing man and woman that symbolizes the dual principle of procreation and creation. Then they sit together in their inner light, dream and realize and converse with each other, presences seated there together, their bodies immaterialized by the blackness, voices from without their communality.

In a general sense, for everyone present the purpose of the session is a therapeutic catharsis. The chemicals of transformation of revelation that open the circuits of light, vision, and communication, called by us mind-manifesting, were known to the American Indians as medicines: the means given to men to know and to heal, to see and to say the truth. Among the Mazatecs, many, one time or another during their lives, have eaten the mushrooms, whether to cure themselves of an ailment or to resolve a problem; but it is not everyone who has a predilection for such extreme and arduous experiences of the creative

imagination or who would want to repeat such journeys into the strange, unknown depths of the brain very frequently: those who do are the shamans, the masters, whose vocation it is to eat the mushrooms because they are the men of the spirit, the men of language, the men of wisdom. They are individuals recognized by their people to be expert in such psychological adventures, and when the others eat the mushrooms they always call to be with them, as a guide, one of those who is considered to be particularly acquainted with these modalities of the spirit. The medicine man presides over the session, for just as the Mazatec family is paternal and authoritarian, the liberating experience unfolds in the authoritarian context of a situation in which, rather than being allowed to speak or encouraged to express themselves, everyone is enjoined to keep silent and listen while the shaman speaks for each of those who are present. As one of the early Spanish chroniclers of the New World said: "They pay a sorcerer who eats them [the mushrooms] and tells them what they have taught him. He does so by means of a rhythmic chant in full voice."

The Mazatecs say that the mushrooms speak. If you ask a shaman where his imagery comes from, he is likely to reply: I didn't say it, the mushrooms did. No mushroom speaks, that is a primitive anthropomorphization of the natural, only man speaks, but he who eats these mushrooms, if he is a man of language, becomes endowed with an inspired capacity to speak. The shamans who eat them, their function is to speak, they are the speakers who chant and sing the truth, they are the oral poets of their people, the doctors of the word, they who tell what is wrong and how to remedy it, the seers and oracles, the ones possessed by the voice. "It is not I who speak," said Heraclitus, "it is the logos." Language is an ecstatic activity of signification. Intoxicated by the mushrooms, the fluency, the ease, the aptness of expression one becomes capable of are such that one is astounded by the words that issue forth from the contact of the intention of articulation with the matter of experience. At times it is as if one were being told what to say, for the words leap to mind, one after another, of themselves without having to be searched for: a phenomenon similar to the automatic dictation of the surrealists except that here the flow of consciousness, rather than being disconnected, tends to be coherent: a rational enunciation of meanings. Message fields of communication with the world, others, and one's self are disclosed by the mushrooms. The spontaneity they liberate is not only perceptual, but linguistic, the spontaneity of speech, of fervent, lucid discourse, of the logos in activity. For the shaman, it is as if existence were uttering itself through him. From the beginning, once what they have eaten has modified their consciousness, they begin to speak and at the end of each phrase they say *tzo*-"says" in their language-like a rhythmic punctuation of the said. Says, says, says. It is said. I say. Who says? We say, man says, language says, being and existence say. (2)

Cross-legged on the floor in the darkness of huts, close to the fire, breathing the incense of copal, the shaman sits with the furrowed brow and the marked mouth of speech. Chanting his words, clapping his hands, rocking to and fro, he speaks in the night of chirping crickets. What is said is more concrete than ephemeral phantasmagoric lights: words are materializations of consciousness; language is a privileged vehicle of our relation to reality. Let us go looking for the tracks of the spirit, the shamans say. Let us go to the cornfield looking for the tracks of the spirits' feet in the warm ground. So then let us go walking ourselves along the path in search of significance, following the words of two discourses enregistered like tracks on magnetic tapes, then translated from the native tonal language, to discover and explicitate what is said by an Indian medicine man and medicine woman during such ecstatic experiences of the human

voice speaking with rhythmic force the realities of life and society.

The short, stout, elderly woman with her laughing moon face, dressed in a *huipil*, the long dress, embroidered with flowers and birds, of the Mazatec women, a dark shawl wrapped around her shoulders, her gray hair parted down the middle and drawn into two pigtails, golden crescents hanging from her ears, bent forward from where she knelt on the earthen floor of the hut and held a handful of mushrooms in the fragrant, purifying smoke of copal rising from the glowing coals of the fire, to bless them: known to the ancient Meso-Americans as the Flesh of God, called by her people the Blood of Christ. Through their miraculous mountains of light and rain, the Indians say that Christ once walked-it is a transformation of the legend of Quetzalcoatl-and from where dropped his blood, the essence of his life, from there the holy mushrooms grew, the awakeners of the spirit, the food of the luminous one. Flesh of the world. Flesh of language. In the beginning was the word and the word became flesh. In the beginning there was flesh and the flesh became linguistic. Food of intuition. Food of wisdom. She ate them, munched them up, swallowed them and burped; rubbed ground-up tobacco along her wrists and forearms as a tonic for the body; extinguished the candle; and sat waiting in the darkness where the incense rose from the embers like glowing white mist. Then after a while came the enlightenment and the enlivenment and all at once, out of the silence, the woman began to speak, to chant, to pray, to sing, to utter her existence: (3)

My God, you who are the master of the whole world, what we want is to search for and encounter from where comes sickness, from where comes pain and affliction. We are the ones who speak and cure and use medicine. So without mishap, without difficulty, lift us into the heights and exalt us.

From the beginning, the problem is to discover what the sickness is the sick one is suffering from and prognosticate the remedy. Medicine woman, she eats the mushrooms to see into the spirit of the sick, to disclose the hidden, to intuit how to resolve the unsolved: for an experience of revelations. The transformation of her everyday self is transcendental and gives her the power to move in the two relevant spheres of transcendence in order to achieve understanding: that of the other consciousness where the symptoms of illness can be discerned; and that of the divine, the source of the events in the world. Together with visionary empathy, her principal means of realization is articulation, discourse, as if by saying she will say the answer and announce the truth.

It is necessary to look and think in her spirit where it hurts. I must think and search in your presence where your glory is, My Father, who art the Master of the World. Where does this sickness come from? Was it a whirlwind or bad air that fell in the door or in the doorway? So are we going to search and to ask, from the head to the feet, what the matter is. Let's go searching for the tracks of her feet to encounter the sickness that she is suffering from. Animals in her heart? Let's go searching for the tracks of her feet, the tracks of her nails. That it be alleviated and healed where it hurts. What are we going to do to get rid of this sickness?

For the Mazatecs, the psychedelic experience produced by the mushrooms is inseparably associated with the cure of illness. The idea of malady should be understood to mean not only physical illness, but mental

troubles and ethical problems. It is when something is wrong that the mushrooms are eaten. If there is nothing the matter with you there is no reason to eat them. Until recent times, the mushrooms were the only medicine the Indians had recourse to in times of sickness. Their medicinal value is by no means merely magical, but chemical. According to the Indians, syphilis, cancer, and epilepsy have been alleviated by their use; tumors cured. They have empirically been found by the Indians to be particularly effective for the treatment of stomach disorders and irritations of the skin. The woman whose words we are listening to, like many, discovered her shamanistic vocation when she was cured by the mushrooms of an illness: after the death of her husband she broke out all over with pimples; she was given the mushrooms to see whether they would "help" her and the malady disappeared. Since then she has eaten them on her own and given them to others.

If someone is sick, the medicine man is called. The treatment he employs is chemical and spiritual. Unlike most shamanistic methods, the Mazatec shaman actually gives medicine to his patients: by means of the mushrooms he administers to them physiologically, at the same time as he alters their consciousness. It is probably for psychosomatic complaints and psychological troubles that the liberation of spontaneous activity provoked by the mushrooms is most remedial: given to the depressed, they awaken a catharsis of the spirit; to those with problems, a vision of their existential way. If he hasn't come to the conclusion that the illness is incurable, the medicine man repeats the therapeutic sessions three times at intervals. He also works over the sick, for his intoxicated condition of intense, vibrant energy gives him a strength to heal that he exercises by massage and suction.

His most important function, however, is to speak for the sick one. The Mazatec shamans eat the mushrooms that liberate the fountains of language to be able to speak beautifully and with eloquence so that their words, spoken for the sick one and those present, will arrive and be heard in the spirit world from which comes benediction or grief. The function of the speaker, nevertheless, is much more than simply to implore. The shaman has a conception of *poesis* (4) in its original sense as an action: words themselves are medicine. To enunciate and give meaning to the events and situations of existence is life giving in itself.

"The psychoanalyst listens, whereas the shaman speaks," points out Levi-Strauss:

When a transference is established, the patient puts words into the mouth of the psychoanalyst by attributing to him alleged feelings and intentions; in the incantation, on the contrary, the shaman speaks for his patient. He questions her and puts into her mouth answers that correspond to the interpretation of her condition. A pre-requisite role—that of listener for the psychoanalyst and of orator for the shaman—establishes a direct relationship with the patient's conscious and an indirect relationship with his unconscious. This is the function of the incantation proper. The shaman provides the sick woman with a *language* by means of which unexpressed and otherwise inexpressible psychic states can be immediately expressed. And it is the transition to this verbal expression—at the same time making it possible to undergo in an ordered and intelligible form a real experience that would otherwise be chaotic and inexpressible—which induces the release of the physiological process, that is, the reorganization, in a favorable direction, of the process to

which the sick woman is subjected. (5)

These remarks of the French anthropologist become particularly relevant to Mazatec shamanistic practice when one considers that the effect of the mushrooms, used to make one capable of curing, is to inspire the shaman with language and transform him into an oracle.

"That come all the saints, that come all the virgins," chants the medicine woman in her sing-song voice, invoking the beneficent forces of the universe, calling to her the goddesses of fertility, the virgins: fertile ones because they have not been sowed and are fresh for the seed of men to beget children in their wombs.

The Virgin of Conception and the Virgin of the Nativity. That Christ come and the Holy Spirit. Fifty-three Saints. Fifty-three Saintesses. That they sit down at her side, on her mat, on her bed, to free her from sickness.

The wife of the man in whose house she was speaking was pregnant and throughout the session of creation, from the midst of genesis, her language as spontaneous as her being that has begun to vibrate, she concerns herself with the emergence of life, with the birth of an existence into that everyday social world that. her developing discourse expresses:

With the baby that is going to come there is no suffering, says. It's a matter of a moment, there isn't going to be any suffering, says. From one moment to another it will fall into the world, says. From one moment to another, we are going to save her from her woe, says. That her innocent creature come without mishap, says. Her elf. That is what it is called when it is still in the womb of its mother. From one moment to another, that her innocent creature, her elf come, says.

"We are going to search and question," she says, "untie and disentangle." She is on a journey, for there is distanciation and going there, somewhere, without her even moving from the spot where she sits and speaks. Her consciousness is roaming throughout existential space. Sibyl, seer, and oracle, she is on the track of significance and the pulsation of her being is like the rhythm of walking.

"Let us go searching for the path, the tracks of her feet, the tracks of her nails. From the right side to the left side, let us look." To arrive at the truth, to solve problems and to act with wisdom, it is necessary to find the way in which to go. Meaning is intentional. Possibilities are paths to be chosen between. For the Indian woman, footprints are images of meaning, traces of a going to and from, sedimented clues of significance to be looked for from one side to the other and followed to where they lead: indicators of directionality; signs of existence. The hunt for meaning is a temporal one, carried into the past and projected into the future; what happened? she inquires, what will happen? leaving behind for what is ahead go the footprints between departure and arrival: manifestations of human, existential ecstasis. And the method of looking, from the right side to the left side, is the articulation of now this intuition, fact, feeling or wish, now that, the intention of speaking bringing to light meanings whose associations and

further elucidations are like the discovery of a path where the contents to be uttered are tracks to be followed into the unexplored, the unknown and unsaid into which she adventures by language, the seeker of significance, the questioner of significance, the articulator of significance: the significance of existence that signifies with signs by the action of speaking the experience of existence.

"Woman of medicines and curer, who walks with her appearance and her soul," sings the woman, bending down to the ground and straightening up, rocking back and forth as she chants, dividing the truth in time to her words: emitter of signs. "She is the woman of the remedy and the medicine. She is the woman who speaks. The woman who puts everything together. Doctor woman. Woman of words. Wise woman of problems."

She is not speaking, most of the time, for any particular person, but for everyone: all who are afflicted, troubled, unhappy, puzzled by the predicaments of their condition. Now, in the course of her discourse, uttering realities, not hallucinations, talking of existence in a communal world where the we is more frequent than the I, she comes to a more general sickness and aggravation than physical illness: the economic condition of poverty in which her people live.

"Let us go to the cornfield searching for the tracks of the feet, for her poorness and humility. That gold and silver come," she prays. "Why are we poor? Why are we humble in this town of Huautla?" That is the paradox: why in the midst of such great natural wealth as their fertile, plentiful mountains where waterfalls cascade through the green foliage of leaves and ferns, should they be miserable from poverty, she wants to know. The daily diet of the Indians consists of black beans and tortillas covered with red chili sauce; only infrequently, at festivals, do they eat meat. White spots caused by malnutrition splotch their red faces. Babies are often sick. It is wealth she pleads for to solve the problem of want.

The mushrooms, which grow only during the season of torrential rains, awaken the forces of creation and produce an experience of spiritual abundance, of an astonishing, inexhaustible constitution of forms that identifies them with fertility and makes them a mediation, a means of communion, of communication between man and the natural world of which they are the metaphysical flesh. The theme of the shamaness, mother and grandmother, woman of fertility, bending over as she chants and gathering the earth to her as if she were collecting with her hands the harvest of her experience, is that of giving birth, is that of growth. Agriculturalists, they are people of close family interrelationships and many children: the clusters of neolithic thatch-roofed houses on the mountain peaks are of extended family groups. The woman's world is that of the household, her concern is for her children and all the children of her people.

"All the family, the babies and the children, that happiness come to them, that they grow and mature without anything befalling them. Free them from all classes of sickness that there are here in the earth. Without complaint and with good will," she says, "so will come well-being, will come gold. Then we will have food. Our beans, our gourds, our coffee, that is what we want. That come a good harvest. That come richness, that come well-being for all of our children. All my shoots, my children, my seeds," she sings.

But the world of her children is not to be her world, nor that of their grandfathers. Their indigenous society is being transformed by the forces of history. Until only recently, isolated from the modern world,

the Indians lived in their mountains as people lived in the neolithic. There were only paths and they walked everywhere they went. Trains of burros carried out the principal crop-coffee-to the markets in the plain. Now roads have been built, blasted out of rock and constructed along the edges of the mountains over precipices! to connect the community with the society beyond. The children are people of opposites: just as they speak two languages, Mazatec and Spanish, they live between two times: the timeless, cyclical time of recurrence of the People of the Deer and the time of progress, change and development of modern Mexico. In her discourse, no stereotyped rite or traditional ceremony with prescribed words and actions, speaking of everything, of the ancient and the modern, of what is happening to her people, the woman of problems, peering into the future, recognizes the inevitable process of transition, of disintegration and integration, that confronts her children: the younger generation destined to live the crisis and make the leap from the past into the future. For them it is necessary to learn to read and to write and to speak the language of this new world and in order to advance themselves, to be educated and gain knowledge, contained in books, radically different from the traditions of their own society whose language is oral and unwritten, whose implements are the hoe, the axe, and the machete.

Also a book is needed, says. Good book. Book of good reading in Spanish, says. In Spanish. All your children, your creatures, that their thought and their custom change, says. For me there is no time. Without difficulty, let us go, says. With tenderness. With freshness. With sweetness. With good will.

"Don't leave us in darkness or blind us," she begs the origins of light, for in these supernatural modalities of consciousness there are dangers on every hand of aberration and disturbance. "Let us go along the good path. The path of the veins of our blood. The path of the Master of the World. Let us go in a path of happiness." The existential way, the conduct of one's life, is an idea to which she returns again and again. The paths she mentions are the moral, physical, mental, emotional qualities typical of the experience of animated conscious activity from the midst of which spring her words: goodness, vitality, reason, transcendence, and joy. Seated on the ground in the darkness, seeing with her eyes closed, her thought travels within along the branching arteries of the bloodstream and without across the fields of existence. There is a very definite physiological quality about the mushroom experience which leads the Indians to say that by a kind of visceral introspection they teach one the workings of the organism: it is as if the system were projected before one into a vision of the heart, the liver, lungs, genitals, and stomach.

In the course of the medicine woman's discourse, it is understandable that she should, from astonishment, from gratitude, from the knowledge of experience, say something about the mushrooms that have provoked her condition of inspiration. In a sense, to speak of "the mushroom experience" is a reification as absurd as the anthropomorphization of the mushrooms when it is said that they talk: the mushrooms are merely the means, in interaction with the organism, the nervous system, and the brain, of producing an experience grounded in the ontological-existential possibilities of the human, irreducible to the properties of a mushroom. The experience is psychological and social. What is spoken of by the shamaness is her communal world; even the visions of her imagination must have their origin in the context of her existence and the myths of her culture. The subject of another society will have other visions and express a different content in his discourse. It would seem probable, however, that apart from emotional similarities, colored illuminations, and the purely abstract patterns of a universal conscious activity,

between the experiences of individuals with differing social inferences, the common characteristic would be discourse, for judging by their effect the chemical constituents of the mushrooms have some connection with the linguistic centers of the brain. "So says the teacher of words," says the woman, "so says the teacher of matters." It is paradoxical that the rediscovery of such chemicals should have related their effects to madness and pejoratively called them drugs, when the shamans who used them spoke of them as medicines and said from their experience that the metamorphosis they produced put one into communication with the spirit. It is precisely the value of studying the use in so-called primitive societies of such chemicals that the way be found beyond the superficial to a more essential understanding of phenomena which we, with our limited conception of the rational, have too quickly, perhaps mistakenly, termed irrational, instead of comprehending that such experiences are revelations of a primordial existential activity, of "a power of signification, a birth of sense or a savage sense." (6) What are we confronted with by the shamanistic discourse of the mushroom eaters? A modality of reason in which the logos of existence enunciates itself, or by the delirium and incoherence of derangement?

"They are doing nothing but talk," says the medicine woman, "those who say that these matters are matters of the past. They are doing nothing but talk, the people who call them crazy mushrooms." They claim to have knowledge of what they do not have any experience of; consequently their contentions are nonsense: nothing but expressions of the conventionality the mushrooms explode by their disclosure of the extraordinary; mere chatter if it weren't for the fact that the omnipotent They forms the force of repression which, by legislation and the implementation of authority, has come to denominate infractions of the law and the code of health, the means of liberation that once were called medicines. In a time of pills and shots, of scientific medicine, the wise woman is saying, the use of the mushrooms is not an anachronistic and obsolete vestige of magical practices: their power to awaken consciousness and cure existential ills is not any the less relevant now than it was in the past. She insists that it is ignorance of our dimension of mystery, of the wellsprings of meaning, to think that their effect is insanity.

"Good and happiness," she says, naming the emotions of her activated, perceptualized being. "They are not crazy mushrooms. They are a remedy, says. A remedy for decent people. For the foreigners," she says, speaking of us, wayfarers from advanced industrial society, who had begun to arrive in the high plazas of her people to experiment with the psychedelic mushrooms that grew in the mountains of the Mazatecs. She has an inkling of the truth, that what we look for is a cure of our alienations, to be put back in touch, by violent means if necessary, with that original, creative self that has been alienated from us by our middle-class families, education, and corporate world of employment.

"There in their land, it is taken account of, that there is something in these mushrooms, that they are good, of use," she says. "The doctor that is here in our earth. The plant that grows in this place. With this we are going to put together, we are going to alleviate ourselves. It is our remedy. He that suffers from pain and illness, with this it is possible to alleviate him. They aren't called mushrooms. They are called prayer. They are called well-being. They are called wisdom. They are there with the Virgin, Our Mother, the Nativity." The Indians do not call the mushrooms of light mushrooms, they call them the holy ones. For the shamaness, the experience they produce is synonymous with language, with communication, on behalf of her people, with the supernatural forces of the universe; with plenitude and joyfulness; with perception, insight, and knowledge. It is as if one were born again; therefore their patroness is the

Goddess of Birth, the Goddess of Creation.

With prayers we will get rid of it all. With the prayers of the ancients. We will clean ourselves, we will purify ourselves with clear water, we will wash our intestines where they are infected. That sicknesses of the body be gotten rid of. Sicknesses of the atmosphere. Bad air. That they be gotten rid of, that they be removed. That the wind carry them away. For this is the doctor. For this is the plant. For this is the sorcerer of the light of day. For this is the remedy. For this is the medicine woman, the woman doctor who resolves all classes of problems in order to rid us of them with her prayers. We are going with well-being, without difficulty, to implore, to beg, to supplicate. Well being for all the babies and the creatures. We are going to beg, to implore for them, to beseech for their well-being and their studies, that they live, that they grow, that they sprout. That freshness come, tenderness, shoots, joy. That we be blessed, all of us.

She goes on talking and talking, non-stop; there are lulls when her voice slows down, fades out almost to a whisper; then come rushes of inspiration, moments of intense speech; she yawns great yawns, laughs with jubilation, claps her hands in time to her interminable singsong; but after the setting out, the heights of ecstasy are reached, the intoxication begins to ebb away, and she sounds the theme of going back to normal, everyday conscious existence again after this excursion into the beyond, of rejoining the ego she has transcended:

We are going to return without mishap, along a fresh path, a good path, a path of good air; in a path through the cornfield, in a path through the stubble, without complaint or any difficulty, we return without mishap. Already the cock has begun to crow. Rich cock that reminds us that we live in this life.

The day that dawns is that of a new world in which there is no longer any need to walk to where you go. "With tenderness and freshness, let us go in a plane, in a machine, in a car. Let us go from one side to another, searching for the tracks of the fists, the tracks of the feet, the tracks of the nails."

It seemed that she had been speaking for eight hours. The seconds of time were expanded, not from boredom, but from the intensity of the lived experience. In terms of the temporality of clocks, she had only been speaking for four hours when she concluded with a vision of the transcendence that had become immanent and had now withdrawn from her. "There is the flesh of God. There is the flesh of Jesus Christ. There with the Virgin." The most frequently repeated words of the woman are freshness and tenderness; those of the shaman, whose discourse we will now consider, are fear and terror: what one might call the emotional poles of these experiences. There is an illness that the Mazatecs speak of that they name fright. We say traumatism. They walk through their mountains along their arduous paths on the different levels of being, climbing and descending, in the sunlight and through the clouds; all around there are grottos and abysses, mysterious groves, places where live the *laá*, the little people, mischievous dwarfs and gnomes. Rivers and wells are inhabited by spirits with powers of enchantment. At night in these altitudes, winds whirl up from the depths, rush out of the distance like monsters, and pass, tearing everything in their path with their fierce claws. Phantoms appear in the mists. There are persons with the evil eye. Existence in the

world and with others is treacherous, perilous: unexpectedly something may happen to you and that event, unless it is exorcised, can mark you for life.

The Indians say following the beliefs of their ancestors, the Siberians, that the soul is sometimes frightened from one, the spirit goes, you are alienated from yourself or possessed by another: you lose yourself. It is for this neurosis that the shamans, the questioners of enigmas, are the great doctors and the mushrooms the medicine. It is the task of the Mazatec shaman to look for the extravagated spirit, find it, bring it back, and reintegrate the personality of the sick one. If necessary, he pays the powers that have appropriated the spirit by burying cacao, beans of exchange, wrapped in the bark cloth of offerings, at the place of fright which he has divined by vision. The mushrooms, the shamans say, show: you see, in the sense that you realize, it is disclosed to you. "Bring her spirit, her soul," implores the medicine woman to whom we have just been listening. "Let her spirit come back from where it got lost, from where it stayed, from where it was left behind, from wherever it is that her spirit is wandering lost."

With just such a traumatic experience, began the shamanistic vocation of the man we will now study. In his late fifties, he has been eating the mushrooms for nine years. Why did he begin? "I began to eat them because I was sick," he said when asked.(7)

No matter how much the doctors treated me, I didn't get well. I went to the Latin American Hospital. I went to Cordoba as well. I went to Mexico. I went to Tehuacan and wasn't alleviated. Only with the mushrooms was I cured. I had to eat the mushrooms three times and the man from San Lucas, who gave them to me, proposed his work as a medicine man to me, telling me: now you are going to receive my study. I asked him why he thought I was going to receive it when I didn't want to learn anything about his wisdom, I only wanted to get better and be cured of my illness. Then he answered me: now it is no longer you who command. It is already the middle of the night. I am going to leave you a table with ground tobacco on it and a cross underneath it so that you learn this work. Tell me which of these things you choose and like the best of all, he said, when everything was ready. Which of these works do you want? I answered that I didn't want what he offered me. Here you don't give the orders, he replied; I am he who is going to say whether you receive this work or not because I am he who is going to give you your diploma in the presence of God. Then I heard the voice of my father. He had been dead for forty-three years when he spoke to me the first time that I ate the mushrooms: This work that is being given to you, he said, I am he who tells you to accept it. Whether you can see me or not, I don't know. I couldn't imagine from where this voice came that was speaking to me. Then it was that the shaman of San Lucas told me that the voice I was hearing was that of my father. The sickness from which I was suffering was alleviated by eating the mushrooms. So I told the old man, I am disposed to receive what it is that you offer me, but I want to learn everything. Then it was that he taught me how to suck through space with a hollow tube of cane. To suck through space means that you who are seated there, I can draw the sickness out of you by suction from a distance.

What had begun as a physical illness, appendicitis, became a traumatic neurosis. The doctors wheeled him

into an operating room-he who had never been in a hospital in his life-and suffocated him with an ether mask. And he gave up the ghost while they cut the appendix out of him. When he came to, he lay frightened and depressed, without any will to live, he'd had enough. Instead of recuperating, he lay like a dead man with his eyes wide open, not saying anything to anyone, what was the use, his life had been a failure, he had never become the important man he had aspired all his life to be, now it was too late; his life was over and he had done nothing that his children might remember with respect and awe. The doctors couldn't help him because there was nothing wrong with him physically; contrary to what he believed, he had survived the operation; the slash into his stomach had been sewn up and had healed; nevertheless, he remained apathetic and unresponsive, for he had been terrified by death and his spirit had flown away like a bird or a fleet-footed deer. He needed someone to go out and hunt it for him, to bring back his spirit and resuscitate him.

The medicine man, from the nearby village of San Lucas, whom he called to him when the modern doctors failed to cure him of the strange malady he suffered from, was renowned throughout the mountains as a great shaman, a diviner of destiny. The short, slight, wizened old man was 105 years old. He gave to his patient, who was suffering from depression, the mushrooms of vitality, and the therapy worked. He vividly relived the operation in his imagination. According to him, the mushrooms cut him open, arranged his insides, and sewed him up again. One of the reasons he hadn't recovered was his conviction that materialistic medicine was incapable of really curing since it was divorced from all cooperation with the spirits and dependence upon the supernatural.

In his imagination, the mushrooms performed another surgical intervention and corrected the mistakes of the profane doctor which he considered responsible for his lingering lethargy. He went through the whole process in his mind. It was as if he were operating upon himself, undoing what had been done to him, and doing it over again himself. The trauma was exorcised. By intensely envisioning with a heightened, expanded consciousness what had happened to him under anesthesia, he assumed at last the frightening event he had previously been unable to integrate into his experience. His physiological cure was completed psychologically; he was finally healed by virtue of the assimilative, creative powers of the imagination. The dead man came back to life, he wanted to live because he felt once again that he was alive and had the force to go on living: once exhausted and despondent, he was now invigorated and rejuvenated.

The cure is successful because not only is his spirit awakened, but he is offered another future: a new profession that is a compensation for his humble one as a storekeeper. The ancient wise man, on the brink of death, wants to transmit to the man in his prime, his knowledge. What he encounters is resistance. The other doesn't want to assume the vocation of shaman, he only wants to be cured, without realizing that the cure is inseparable from the acceptance of the vocation which will release him from the repression of his creative forces that has caused the neurosis with which he is afflicted. It is no longer you who command, he is told, for his impulse to die is stronger than his desire to live; therefore the counterforce, if it is to be effective, cannot be his: it must be the will of the other transferred to him. You are too far gone to have any say in the matter, the medicine man tells him, it is already the middle of the night. By negating the will of his patient, he arouses it and prepares him to accept what is being suggested to him.

He shows him the table, the tobacco, the cross: signs of the shaman's work. The table is an altar at which to officiate.. When the Mazatecs eat the mushrooms they speak of the sessions as masses. The shaman, even though a secular figure unordained by the Church, assumes a sacerdotal role as the leader of these ceremonies. In a similar way, for the Indians each father of a family is the religious priest of his household. The tobacco, San Pedro, is believed to have powerful magical and remedial values. The cross indicates a crossing of the ways, an intersection of existential paths, a change, as well as being the religious symbol of crucifixion and resurrection. The shaman tells him to choose. Still the man refuses. You don't give the orders, says the medicine man intent upon evoking the patient's other self in order to bring him back to life, the I who is another. Whether you want to or not, you are going to receive your diploma, he says, to incite him with the prospect of award and reputation. Living in an oral culture without writing, where the acquisition of skills is traditional, handed down from father to son, mother to daughters rather than contained in books, for the Mazatecs wisdom is gained during the experiences produced by the mushrooms: they are experiences of vision and communication that impart knowledge.

Now he is spoken to. The inner voice is suddenly audible. He hears the call. He is told to accept the vocation of medicine man that he has hitherto adamantly. refused. He cannot recognize this voice as his own, it must be another's; and the shaman, intent upon giving him a new destiny, sure of the talent he has divined, interprets for him from what region of himself springs the command he has heard. It is your father who is telling you to accept this work. A characteristic of such transcendental experiences is that family relationships, in the nexus of which personality is formed, become present to one with intense vividness. His superego, in conjunction with the liberation of his vitality, has spoken to him and his resistance is liquidated; he decides to live and accepts the new vocation around which his personality is reintegrated: he becomes an adept of the dimensions of consciousness where live the spirits; a speaker of mighty words.

In his house, we entered a room with bare concrete walls and a high roof of corrugated iron. His wife, wrapped in shawls, was sitting on a mat. His children were there; his family had assembled to eat the mushrooms with their father; one or two were given to the children of ten and twelve. The window was closed and with the door shut, the room was sealed off from the outside world; nobody would be permitted to leave until the effect of what they had eaten had passed away as a precaution against the peril of derangement. He was a short, burly man, dressed in a reefer jacket over a tee shirt, old brown bell-bottomed pants down to his short feet, an empty cartridge belt around his waist. In daily life, he is the owner of a little store stocked meagerly with canned goods, boxes of crackers, beer, soda, candy, bread, and soap. He sits behind the counter throughout the day looking out upon the muddy street of the town where dogs prowl in the garbage between the legs of the passers-by. From time to time he pours out a shot glass of cane liquor for a customer. He himself neither smokes nor drinks. He is a hunter in whom the instincts of his people survive from the time when they were chasers of game as well as agriculturalists: inhabitants of the Land of the Deer.

Now it is night-time and he prepares to exercise his shamanistic function. His great- grandfather was one of the counselors of the town and a medicine man. With the advent of modern medicine and the invasion of the foreigners in search of mushrooms, the shamanistic customs of the Mazatecs have almost completely vanished. He himself no longer believes many of the beliefs of his ancestors, but as one of the

last oral poets of his people, he consciously keeps alive their traditions. "How good it is," he says, "to talk as the ancients did." He hardly speaks Spanish and is fluent only in his native language. Spreading out the mushrooms in front of him, he selected and handed a bunch of them to each of those present after blessing them in the smoke of the copal. Once they had been eaten, the lights were extinguished and everyone sat in silence. Then he began to speak, seated in a chair from which he got up to dance about, whirling and scuffling as he spoke in the darkness. It was pouring, the rain thundering on the roof of corrugated iron. There were claps of thunder. Flashes of lightning at the window.

Christ, Our Lord, illuminate me with the light of day, illuminate my mind. Christ, Our Lord, don't leave me in darkness or blind me, you who know how to give the light of day, you who illuminate the night and give the light. So did the Holy Trinity that made and put together the world of Christ, Our Lord, illuminated the Moon, says; illuminated the Big Star, says; illuminated the Cross Star, says; illuminated the Hook Star, says; illuminated the Sandal, says; illuminated the Horse, says.

One who eats the mushroom sinks into somnolence during the transition from one modality of consciousness to another, into a deep absorption, a reverie. Gradually colors begin to well up behind closed eyes. Consciousness becomes consciousness of irradiations and effulgences, of a flux of light patterns forming and unforming, of electric currents beaming forth from within the brain. At this initial moment of awakening, experiencing the dawn of light in the midst of the night, the shaman evokes the illumination of the constellations at the genesis of the world. Mythopoetical descriptions of the creation of the world are constant themes of these creative experiences. From the beginning, the vision his words create is cosmological. Subjective phenomena are given correlates in the elemental, natural world. One is not inside, but outside.

"This old hawk. This white hawk that Saint John the Evangelist holds. That whistles in the dawn. Whistles in the light of day. Whistles over the water." Wings spread wide, the annunciatory bird, image of ascent, circles in the sky of the morning, drifting on the wind of the spirit above the primordial terrain the speaker has begun to explore and delineate, his breathing, his inhalations and exhalations, as amplified as his expanded being; an explanation for the sudden expulsion of air, the whooshes and high-pitched, eerie whistles of the shamans on their transcendental flights into the beyond.

"Straight path, says. Path of the dawn, says. Path of the light of day, says." Through the fields of being there are many directions in which to go, existences are different ways to live life. The idea of paths, that appears so frequently in the shamanistic discourses of the Mazatecs comes from the fact that these originary experiences are creative of intentions. To be in movement, going along a path, is an expressive vision of the ecstatic condition. The path the speaker is following is that which leads directly to his destination, to the accomplishment of his purpose; the path of the beginning disclosed by the rising sun at the time of setting out; the path of truth, of clarity, of that revealed in its being there by the light of day.

"Where the tenderness of San Francisco Huehuetlan is, says. Where the Holy Virgin of San Lucas is, says. Where San Francisco Tecoaatl is, says. San Geronimo Tecoaatl, says." He begins to name the towns of his mountainous environment, to call the landscape into being by language and transform the real into signs.

It is no imaginary world of fantasy he is creating, as those one has become accustomed to hearing of from the accounts of dreamers under the effects of such psychoactive chemicals, fabled lands of nostalgia, palaces, and jeweled perspectives, but the real world in which he lives and works transfigured by his visionary journey and its linguistic expression into a surreal realm where the physical and the mental fuse to produce the glow of an enigmatic significance.

"I am he who speaks with the father mountain. I am he who speaks with danger, I am going to sweep in the mountains of fear, in the mountains of nerves." The other I announces itself, the transcendental ego, the I of the voice, the I of force in communication with force. His existence intensified, he posits himself by his assertions: I am he who. The simultaneous reference to himself in the first and third person as subject and object indicates the impersonal personality of his utterances, uttered by him and by the phenomena themselves that express themselves through him. Arrogantly he affirms his shamanistic function as the mediator between man and the powers that determine his fate; he is the one who converses with all connoted by father: power, authority, and origin. He is the one who is on familiar terms with the sources of fright. The conception of existence manifested by his words is one of peril, anxiety, and terror: experiences of which he has become knowledgeable by virtue of his own traumas, his life as a hunter, and his adventures into the weird, secret regions of the psyche. Where there is foreboding and trembling, the medicine man tranquilizes by exorcising the causes of disturbance. His work lies among the nerves, not in the underworld, but on the heights, places of as much anguish as the depths, where the elation of elevation is accompanied by the fear of falling into the void of chasms. This is perhaps why, throughout Central and South America, the conception of illness in the jungle areas is the paranoid one of witchcraft, whereas in the mountainous areas is prevalent the vertiginous idea of fright and loss of self. (8)

"There in Bell Mountain, says. There is the dirty fright. There is the garbage, says. There is the claw, says. There is the terror, says. Where the day is, says. Where the clown is, says. The Lord Clown, says." In vision he sees, throughout his being he senses a repulsive place of filth and contamination, a stinking site of pustulence, of rottenness and nausea, where lies a claw that might have dealt with cruel viciousness an infected wound. His words, emanating evil, seem to insinuate some horrible deed that left an aftermath of guilt. The sinister hovers in the air. Where? Where the clown is, he says. Concern and carefreeness are linked together, dread and laughter, from which we catch an insight into the meaning of the matter: during such experiences of liberation, there are likely to be encountered disturbances of consciousness by conscience, when reflection comes into conflict with spontaneity, guilt with innocence. It is as if the self drew back in fright from its ebullience, from its forgetfulness, unable to endure its carefreeness for long without anxiety. But the exuberant welling up of forms is ceaseless, in this flux, this fountain, this energetic springing forth of life, the past is left behind for the future, all is renewed. Beyond good and evil is the playfulness of the creative spirit incarnated by the clown, character of fortuity, the laughing one with his gay science.

Thirteen superior whirlwinds. Thirteen whirlwinds of the atmosphere. Thirteen clowns, says. Thirteen personalities, says. Thirteen white lights, says. Thirteen mountains of points, says. Thirteen old hawks, says. Thirteen white hawks, says. Thirteen personalities, says. Thirteen mountains, says. Thirteen clowns, says. Thirteen peaks, says. Thirteen stars of the morning.

The enumeration, by what seems to be a process of free association, of whirlwinds, clowns, personalities, lights, mountains, birds, and stars, is an expression of his ecstatic inventiveness. Whether he says what he sees or sees what he says, his activated consciousness is a whirlwind of imaginings and colored lights. Why always thirteen? Because twelve is many, but an even number, whereas thirteen is too many, an exaggeration, and signifies a multitude. What's more, he probably likes the sound of the word thirteen.

The mushroom session of language creates language, creates the words for phenomena without name. The white lights that sometimes appear in the sky at night, nobody knows what to call them. The mind activated by the mushrooms, from out of the center of the mystery, from the profoundest semantic sources of the human, invents a word to designate them by. The ancient wise men, to describe the kaleidoscopic illuminations of their shamanistic nights, drew an analogy between the inside and the outside and formed a word that related the spectrum colors created by the sunshine in the spray of waterfalls and the mists of the morning to their conscious experiences of ecstatic enlightenment: these are the whirlwinds he speaks of, gyrating configurations of iridescent lights that appear to him as he speaks, turned round and round and round himself by the turbulent winds of the spirit. Clowns are frequent personae of his discourse, the impish mushrooms come to life, embodiments of merriment, tumbling figments of the spontaneous performing incredible acrobatic feats, funny imaginations of joyfulness. Personalities are more serious. Others. Society. The faces of the people he knows appear to him, then disappear to be succeeded by the apparition of more people. The plurality of incarnated consciousnesses becomes present to him. Multitude. His is an elemental world where cruel, predatory birds wheel in the sky; where the star of the morning shines in the firmament. Outside the dark room where he is speaking, the mountains stand all around in the night.

I am he who speaks with the dangerous mountain, says. I am he who speaks with the Mountain of Ridges, says. I am he who speaks with the Father, says. I am he who speaks with the Mother, says. Where plays the spirit of the day, says. Cold Water Mountain, says. Big River Mountain, says. Mountain of Harvest and Richness, says. Where the terror of the day is, says. Where is the way of the dawn, the way of the day, says.

It is significant that though the psychedelic experience produced by the mushrooms is of heightened perceptivity, the I say is of privileged importance to the I see. The utter darkness of the room, sealed off from the outside, makes any direct perception of the world impossible: the condition of interiorization for its visionary rebirth in images. In such darkness, to open the eyes is the same as leaving them closed. The blackness is alive with impalpable designs in the miraculous air. Even the appearances of the other presences, out of modesty, are protected by the obscurity from the too penetrating, revealing gaze of transcendental perception. Freed from the factuality of the given, the constitutive activity of consciousness produces visions. It is this aspect of such experiences, to the exclusion of all others, that has led them to be called hallucinogenic, without any attempt having been made to distinguish fantasy from intuition. The Mazatec shaman, however, instead of keeping silent and dreaming, as one would expect him to do if the experience were merely imaginative, talks. There are times when in the midst of his ecstasy, whistling and whirling about, he exclaims: "Look at how beautiful we're seeing!"-astonished by the illuminations and patterns he is perceiving-"Look at how beautiful we're seeing. Look at how many

good things of God there are. What beautiful colors I see." Nevertheless, the *I am the one who speaks* enunciates an action and a function, weighted with an importance and efficacy which *I am the one who sees*, hardly more than an interjection of amazement, totally lacks.

"I am he who speaks. I am he who speaks. I am he who speaks with the mountains, with the largest mountains. Speaks with the mountains, says. Speaks with the stones, says. Speaks with the atmosphere, says. Speaks with the spirit of the day." For the Mazatecs, the mountains are where the powers are, their summits, their ranges, radiating with electricity in the night, their peaks and their edges oscillating on the horizons of lightning. To speak with is to be in contact with, in communication with, in conversation with the animate spirit of the inanimate, with the material and the immaterial. To speak with is to be spoken to. By a conversion of his being, the shaman has become a transmitter and receiver of messages.

"I am the dry lightning, says. I am the lightning of the comet, says. I am the dangerous lightning, says. I am the big lightning, says. I am the lightning of rocky places, says. I am the light of the dawn, the light of day, says." He identifies himself with the elements, with the crackle of electricity; superhuman and elemental himself, his words flash from him like lightning. Sparks fly between the synaptic connections of the nerves. He is illuminated with light. He is luminous. He is force, light, and rhythmic, dynamic speech.

The world created by the woman's words, articulating her experience, was a feminine, maternal, domestic one; the masculine discourse of the shaman evokes the natural, ontological world. "She is beseeching for you, this poor and humble woman," said she to the exclusion of all others, that has led them to be called hallucinogenic, without any attempt having been made to distinguish fantasy from intuition. The Mazatec shaman, however, instead of keeping silent and dreaming, as one would expect him to do if the experience were merely imaginative, talks. There are times when in the midst of his ecstasy, whistling and whirling about, he exclaims: "Look at how beautiful we're seeing!"-astonished by the illuminations and patterns he is perceiving-"Look at how beautiful we're seeing. Look at how many good things of God there are. What beautiful colors I see." Nevertheless, the *I am the one who speaks* enunciates an action and a function, weighted with an importance and efficacy which *I am the one who sees*, hardly more than an interjection of amazement, totally lacks.

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The world created by the woman's words, articulating her experience, was a feminine, maternal, domestic one; the masculine discourse of the shaman evokes the natural, ontological world. "She is beseeching for you, this poor and humble woman," said the shamaness. "Woman of huipile, says. Simple woman, says. Woman who doesn't have anything, says." The man, conscious of his virility, announces: "I am he who lightnings forth."

"Where the dirty gulch is, says. Where the dangerous gulch is, says. Where the big gulch is, says. Where the fear and the terror are, says. Where runs the muddy water, says. Where runs the cold water, says." It is a landscape of ravines, mountains, and streams, he charts with his words, of physical qualities with emotional values: a terrain of being in its variations. He evokes the creation, the genesis of all things out of the times of mist; he praises, marvels, wonders at the world. "God the Holy Spirit, as he made and put together the world. Made great lakes. Made mountains. Look at the light of day. Look at how many animals. Look at the dawn. Look at space. Great earths. Earth of God the Holy Spirit." He whistles. The soul was originally conceived of as breath. The wind, he says, is passing through the trees of the forest. His spirit goes flying from place to place throughout the territory of his existence, situating the various locations of the world by naming them, calling them into being by visiting them with his words: where is, he says, where is, to create the geography of his reality. I am, where is. He unfolds the extensions of space around himself, points out and makes present as if he were there himself. "Where the blood of Christ is, says. Where the blood of the diviner is, says. Where the terror and the fright of day are, says. Where the superior lake is, says. Where the big lake is, says. There where large birds fly, says. Where fly dangerous birds." The world is not only paradisiacal in its being there, but frightening, with perils lurking everywhere. "Mountains of great whirlwinds. Where is the fountain of terror. Where is the fountain of fright." And the different places are inhabited by presences, by indwelling spirits, the gnomes, the little people. "Gnome of Cold Water, says. Gnome of Clear Water, says. Gnome of Big River, says. Big Gnome. Gnome of Burned Mountain. Gnome of the spirit of the day. Gnome of Tlocalco Mountain. Gnome of the Marking Post. White Gnome. Delicate Gnome."

The shaman, says Alfred Metraux, is "an individual who, in the interest of the community, sustains by profession an intermittent commerce with the spirits or is possessed by them." (9) According to the classical conception, derived from the ecstatic visionaries of Siberia, the shaman is a person who, by a change of his everyday consciousness, enters the metaphysical realms of the transcendental in order to parley with the supernatural powers and gain an understanding of the hidden reasons of events, of sickness and all manner of difficulty. The Mazatec medicine men are therefore shamans in every sense of the word: their means of inspiration, of opening the circuits of communication between themselves, others, the world, and the spirits, are the mushrooms that disclose, by their psychoactive power, another modality of conscious activity than the ordinary one. The mere eating of the mushrooms, however, does not make a shaman. The Indians recognize that it is not to everyone that they speak; instead there are some who have a longing for awakening, a disposition for exploring the surrealistic dimensions of existence, a poet's need to express themselves in a higher language than the average language of everyday life: for them in a very particular sense the mushrooms are the medicine of their genius. Nonetheless,

there is a very definite idea among the Mazatecs of what the medicine man does, and since the mushrooms are his means of converting himself into the shamanistic condition, the essential characteristics of this particular variety of psychedelic experience must be manifested by his activities.

"I am he who puts together," says the medicine man to define his shamanistic function:

he who speaks, he who searches, says. I am he who looks for the spirit of the day, says. I search where there is fright and terror. I am he who fixes, he who cures the person that is sick. Herbal medicine. Remedy of the spirit. Remedy of the atmosphere of the day, says. I am he who resolves all, says. Truly you are man enough to resolve the truth. You are he who puts together and resolves. You are he who puts together the personality. You are he who speaks with the light of day. You are he who speaks with terror.

It is immediately obvious that a discrepancy exists between the Indian conception of the mushrooms' effect and the ideas of modern psychology: whereas in experimental research reports they are said to produce depersonalization, schizophrenia, and derangement, the Mazatec shaman, inspired by them, considers himself endowed with the power of bringing together what is separated: he can heal the divided personality by releasing the springs of existence from repression to reveal the ecstatic life of the integral self; and from disparate clues, by the sudden synthesis of intuition, realize the solution to problems. The words with which he states what his work is indicate a creative activity neither outside of the realm of reason or out of contact with reality. The center of convergent message fields, sensitive to the meaning of all around him, he expresses and communicates, in direct contact with others through speech, an articulator of the unsaid who liberates by language and makes understood. His intuitions penetrate appearances to the essence of matters. Reality reveals itself through him in words as if it had found a voice to utter itself. The shaman is a signifier in pursuit of significance, intent upon bringing forth the hidden, the obscure into the light of day, the lucid one, intrepid enough to realize that the greatest secrets lie in regions of danger. He is the doctor, not only of the body, but of the self, the one who inquires into the origins of trauma, the interrogator of the familiar and mysterious. It is indeed as if that which he has eaten, by virtue of the possibilities it discovers to him, were of the spirit, for perception becomes more acute, speech more fluent, and the consciousness of significance is quickened. The mushrooms are a remedy to which one has recourse in order to resolve perplexities because the experience is creative of intentions. The way forth from the problematic is conceived of, the meaning of resolved. The shaman, he is the one in communication with the light and with the darkness, who knows of anxiety and how to dispel it: the man of truth, psychologist of the troubled soul.

Where is the fear, says. Where is the terror, says. Where stayed the spirit of this child, says. I have to search for it, says. I have to locate it, says. I have to detain it, says. I have to grab it, says. I have to call it, says. I have to whistle for it in the midst of terror, says. I have to whistle for it through the cumulus clouds. I have to whistle for it with the spirit of the day.

Once more there appears the notion of alienation, the malady of fright, the loss of the self. The task of the shaman, hunter of extravagated spirits, is to reassociate the disassociated. He explains his method himself in these words:

Under the effect of the mushrooms, the lost spirit is whistled for through space for the spirit is alienated, but by means of the mushrooms one can call for it with a whistle. If the person is frightened, the mushrooms know where his spirit is. They are the ones who indicate and teach where the spirit is. Thereby one can speak to it. The sick person then sees the place where his spirit stayed. He feels as if he were tied in that place. The spirit is like a trapped butterfly. When it is whistled for it arrives where one is calling it. When the spirit arrives in the person, the sick one sighs and afterwards is cleaned.

It becomes evident from the words used to describe the condition of fright-the spirit is said to have been left behind, to have stayed somewhere, to be tied up, and as we will see later, to be imprisoned-that just as in the etiology of the neuroses, the sickness is a fixation upon a traumatic past event which the individual is incapable of transcending and from which he must be liberated to be cured. It is not by chance that the mushrooms, which cause a flight of the spirit, should be considered the means of chasing what has flown away. The shaman goes in search; by empathic imagination, sometimes even by dialogue with the disturbed one, he gains an insight into the reasons for the state of shock, which allows him to make his invocations relevant to the individual case. The patient, by the mnemonic power of the mushrooms, freed from inhibitions and repressions, recalls the traumatic event, surmounts the repetition syndrome that perpetuates it by virtue of the ecstatic spontaneity that has been released from him, suffers a catharsis, and is brought back to life, integrated again.

Another method of regaining the lost spirit, used as well as invocation, is to barter for it. Merchants, the Mazatecs conceive of all transactions in terms of commerce, of trading one value for another. Throughout his discourse, the shamans a storekeeper in daily life, dreams of money, of richness, of freedom from poverty. "Father Bank. Big Bank. Where the light of day is. Cordoba. Orizaba." He names the cities where the merchants of Huautla sell their principal commercial crop-coffee-in the market. "Where the Superior Bank is, says. Where the Big Bank is, says. Where the Good Bank is, says. Where there is money of gold, says. Where there is money of silver, says. Where there are big notes, says. Where the bank of gold is, says. Where the bank of well-being is, says." It is not surprising that among such mercantile people it should be considered possible to buy back the lost spirit, to retrieve it in exchange for another value.

"Where the fright of the spirit is. Going to pay for it to the spirit. Going to pay the day. Going to pay the mountains. Going to pay the corners." The shaman becomes a transcendental bargainer. He is told by the supernatural powers how much they demand as a ransom for the spirit they have expropriated, then he undertakes to transact the deal. He explains it himself in this way:

Cacao is used to pay the mountain and to pay for the life of the sick one. The Lord of the Mountain asks for a chicken. This is an important matter because it is the Masters of the Mountains who speak. That is the belief of the ancients. The chicken is the one who has to carry the cacao. Loaded with cacao it has to go and leave the offering in the mountain. Once it is on the mountain, seeing it loaded no one bothers to catch it because already it belongs to the Masters of the Mountain where it is lost forever. The cacao that it carries is money for the Master of the Mountain. The bark paper is used to wrap the bundle and the

parrot feather that goes with it. The signification of the parrot feather is that it is as if the parrot himself arrived on the mountain. It is he who arrives announcing with his songs the arrival of the chicken loaded with cacao, the arrival of the money to pay what was asked for, as if the liberty of a prisoner were being paid for. It is as if an authority said to you, "This prisoner will be set free for a fine of one hundred pesos and if it isn't paid, he won't go free." The transaction probably has the psychological effect of assuaging anxiety with the assurance that the powers angered by a transgression have been appeased.

As we have seen, though these shamanistic chants are creations of language created by the individual creativity of the speakers, the structure of the discourses, short phrases articulated in succession terminated by the punctuation of the word says, tend to be similar from person to person, determined to a large extent by culture and tradition as is much of what is said. An instance is the invocatory reiteration of names, a characteristic common to all the Mazatec shamanistic sessions of speech. The names repeated by the Indian medicine men, devout Catholics, are those of the Virgin and the saints. In ancient times, other divinities must have been named, but without any doubt, to name and make present has always played a role in such chants. "Holy Virgin of the Sanctuary. Holy Virgin. Saint Bartholomew. Saint Christopher. Saint Manuel. Holy Father. Saint Vincent. Saint Mark. Saint Manuel. Virgin Guadalupe, Queen of Mexico." To sing out the holy names serves the function for the oral poet, like the stereotyped phrases of Homeric song, of keeping the chant going during the interludes of inspiration; at the same time, the rhythmic enunciation is a telling over of identities, an expression of the interpersonality of consciousness. To recall again the affirmation of Husserl: Transcendental subjectivity is intersubjectivity. The name is the word for the person. In the mind of the speaker one identity after another becomes present, names call up people, the vision of people calls up names. Instead of naming his own acquaintances, which might occur in a desacralized discourse, the shaman invokes the holy ones. The sacred nomenclature is a sublimation of the nomenclature of family and social relationships.

It is now his everyday self, his wife and his family whom he speaks about. "Our children are going to grow up and live. I see. I see my wife, my little working woman. I love her. I speak to her through space. I speak to her through the cumulus clouds. I call to her spirit. Nothing will befall us." Man and woman, the couple and their children, that is his theme now that love for his family wells up in his heart.

Nothing can happen to us. We will go on living. We will go on living in the company of my wife, of my people. We should not make our wife irritable. We went to receive her before God, in the sight of God, in the Sacred Sacrament, in sight of the altar. There was a great mass, there was a mass of union. We were able to respect each other forty-three days and therefore God disposed that our children should be born and live. Because of that our seeds bore fruit, our offspring grew, offspring and seed that God Our Lord gave us.

He who speaks and says, perhaps it is rumored that the work he is doing, this person, is great, that his ranch is large. He is not presumptuous. He is a humble person. He is a laborious person. He is a person of problems. He is a person who has already loaned his service as an authority. He has realized himself, his gifts are inherited, he is of important people: Justo Pastor, Juan Nazareno. He is of a great root, an important root. Large trees, old trees. All our children will live, says. Will have a good harvest. Will rear their animals.

Well-being and pleasure in their sugar cane, in their coffee groves. I will live much time yet. I will become an old man with gray hair, I will continue living with my offspring and with my people. My children will have education and well-being. Education must be given to my sons.

He says the changes through which he passes, the transformations and permutations of his ecstatic consciousness in the course of its temporalization-the sense of gamble, the risks, the moments of fright, the presence of light and vigor. "It turns into a game of chance, says. It turns into terror, says. It turns into spirit, says."

He whistles and sings and dances about. "That which sounds is a harp in the presence of God and the Angel of the Guard. Plays space, plays the rocks, plays the mountains, plays the corners, plays fear, plays terror, plays the day." He plays the facets of the world as if they were musical instruments. Things and emotions, at the contact of his singing and touch are magically resolved into ringing vibrating tonalities, into music-music of mountains and rocks, of space and fear. "Where sound the trees, says. Where sound the rocks, says. Where sound baskets. Where sounds the spirit of the day." He is hearing the ringing and the buzzing and the humming of his effervescent consciousness and finding analogies for the sounds he hears in the echo chambers of his eardrums: the souging of the wind through the trees, the clinking of stones, the creaking of baskets. He whistles and sings. His words issue forth from the melodic articulation of inarticulate sounds, from the physical movement of his rhythmic whirling about and scuffling in the darkness. "How beautiful I sing," he exclaims. "How beautiful I sing. How many good pleasures concedes to us the Lord of the World." He dances about working himself up to a further pitch of exaltation. "How beautiful I dance. How beautiful I dance." Repetition is one of the aspects of the discourse as it is of the pulsation of energy waves.

"This person is valiant," he says of himself. "He is of the people of Huautla, he is a Huauteacan. With great speed he calls and whistles for the spirits among the mountains; whistles the fright of the spirit." Then he flips out. He throws himself into the shamanistic fit, his voice changes, becomes that of another, rougher, more guttural, and beginning to speak in the speech of San Lucas from where came his old master, a town in the midst of the corn on a high windswept peak, he recalls his spiritual ancestor, the ancient wise man who taught him the use of the gnomic mushrooms. "He is a person of jars. He is of San Lucas. A person of plates. He is a person of jars and bowls. He is an old one." San Lucas is the place where all the black, unadorned, neolithic pottery used throughout the region is made. Men go from town to town carrying the jars, padded with ferns, on their backs to sell them in the marketplaces of the mountain villages. "Old man of pots, dishes, bowls. These are the people of the center. They speak with the mountains arrogantly. He is from San Lucas. He speaks with the whirlwind, with the whirlwind of the interior."

From what he himself tells of this old shaman, appear vestiges of the days when the shaman of the People of the Deer, intermediary between man, nature, and the divine was a thaumaturge who presided over fertility and the hunt. "I had to visit the same medicine man," he recounts, "when we went to the hunt. I had to prepare for him an egg, an egg to be offered to the mountain. It all depends on the value of the animal that one wants. It is as if you were going to buy an animal," he said.

He is the one who says what one is to pay. He goes to leave the egg. Afterwards the dogs go into the woods and begin to work. It is necessary to rub tobacco on the crown of the dogs' heads. But with the egg and twenty-five beans of cacao, the master is sure that the deer is already bought. I have paid for the game, says the true shaman. And every time we went to hunt, we were therefore sure to encounter deer because a good shaman from San Lucas can transform a tree or a stone into a deer once he has exchanged its value for it with the Lord of the Mountain. We were sure to come upon deer because they had been paid for.

"Here come the Huautecons. Here come the Huautecons." Dancing about in the darkness, flapping his coat against his sides to imitate the bounding of a startled deer through the underbrush, he, the hunter of spirits and of game, barking like the dogs closing in around the cornered animal, tells a hunting story, talking rapidly with intense excitement in the gruff voice of one from San Lucas who sees from his vantage point the hunters of Huautla in the distance:

Listen to how their dogs bark. It's an old dog. Here they come by way of the Sad Mountain. They are bringing their kill. There is barking in the mountain. Here they come. Listen to how their arms sound. Already they have shot a colored deer. They pay the mountains. They pay the corners. The deer was killed because the Huautecons pay the price. They paid the spirit. Paid the Bald Mountain. Paid the Hollow Mountain. Paid the Mountain of the Spirit of the Day. Paid fifty pesos. You can't do just as you like. It is necessary to pay the White Gnome. The Huautecons are like clowns. They are carrying the deer off along the path. The rifles of the Huautecons are very fine. These people are important people. They know what they are doing. They know how to call the spirit. The Huautecons call their dogs by blowing a horn. Already the dogs are coming close.

The story comes almost at the conclusion of his discourse. The effect of the mushrooms lasts approximately six hours; usually it is impossible to sleep until dawn. In all such adventures, at the end, comes the idea of a return from where it is one has gone, the return to everyday consciousness. "I return to collect these holy children that served as a remedy," the shaman says, calling back his spirits from their flight into the beyond in order to become his ordinary self again. "Aged clowns. White clowns." The mushrooms he calls sainted children and clowns, relating them by his personifications to beings who are young and joyful, playful, creative, and wise.

"The aurora of the dawn is coming and the light of day. In the name of the Father, the Son, and the Holy Spirit, by the sign of the Holy Cross, free us Our Lord from our enemies and all evil. Amen."

What began in the depths of the night with the illumination of interior constellations in the spaces of consciousness ends with the arrival of the daylight after a night of continuous, animated speech. "I am he who speaks," says the Mazatec shaman.

I am he who speaks. I am he who speaks with the mountains. I am he who speaks with the corners. I am the doctor. I am the man of medicines. I am. I am he who cures. I am he who speaks with the Lord of the World. I am happy. I speak with the mountains. I am he who

speaks with the mountains of peaks. I am he who speaks with the Bald Mountain. I am the remedy and the medicine man. I am the mushroom. I am the fresh mushroom. I am the large mushroom. I am the fragrant mushroom. I am the mushroom of the spirit.

The Mazatecs say that the mushrooms speak. Now the investigators (10) from without should have listened better to the Indian wise men who had experience of what they, white ones of reason, had not. If the mushrooms are hallucinogenic, why do the Indians associate them with communication, with truth and the enunciation of meaning? An hallucination is a false perception, either visual or audible, that does not have any relation at all to reality, a fantastical illusion or delusion: what appears, but has no existence except in the mind. The vivid dreams of the psychedelic experience suggested hallucinations: such imaginations do occur in these visionary conditions, but they are marginal, not essential phenomena of a general liberation of the spontaneous, ecstatic, creative activity of conscious existence. Hallucinations predominated in the experiences of the investigators because they were passive experimenters of the transformative effect of the mushrooms. The Indian shamans are not contemplative, they are workers who actively express themselves by speaking, creators engaged in an endeavor of ontological, existential disclosure. For them, the shamanistic condition provoked by the mushrooms is intuitionary, not hallucinatory. What one envisions has an ethical relation to reality, is indeed often the path to be followed. To see is to realize, to understand. But even more important than visions for the Mazatec shaman are words as real as the realities of the real they utter. It is as if the mushrooms revealed a primordial activity of signification, for once the shaman has eaten them, he begins to speak and continues to speak throughout the shamanistic session of ecstatic language. The phenomenon most distinctive of the mushrooms' effect is the inspired capacity to speak. Those who eat them are men of language, illuminated with the spirit, who call themselves the ones who speak, those who say. The shaman, chanting in a melodic singsong, saying says at the end of each phrase of saying, is in communication with the origins of creation, the sources of the voice, and the fountains of the word, related to reality from the heart of his existential ecstasy by the active mediation of language: the articulation of meaning and experience. To call such transcendental experiences of light, vision, and speech hallucinatory is to deny that they are revelatory of reality. In the ancient codices, the colored books, the figures sit, hieroglyphs of words, holding the mushrooms of language in pairs in their hands: signs of signification.

(2). The inspiration produced by the mushrooms is very much like that described by Nietzsche in *Ecce Homo*. Since the statement of Rimbaud, "I is another," spontaneous language, speaking or writing as if from dictation (to use the common expression for an activity very difficult to describe in its truth) has been of paramount interest to philosophers and poets. Sap the Mexican, Octavio Paz, in an essay on Breton, "The inspired one, the man who in truth speaks, does not say anything that is his: from his mouth speaks language." Octavio Paz, "Andre Breton o La Busqueda del Comienzo," *Corriente Alterna* (Mexico: Siglo Veintiuno, 1967), p. 53. ([Back](#))

(3). The shamanistic discourses studied in this essay, were tape-recorded. I am indebted for the translations to a bilingual woman of Huautla, Mrs. Eloina Estrada de Gonzalez, who listened to the recordings and told me, phrase by phrase, in Spanish, what the shaman and shamaness were saying in

their native language. As far as I know, the words of neither of these oral poets have hitherto been published. They are Mrs. Irene Pineda de Figueroa and Mr. Roman Estrada. The complete text of each discourse takes up ninety-two pages. For the purposes of this essay, I have merely selected the most representative passages. ([Back](#))

(4). ". . . the Greek word which signifies poetry was employed by the writer of an alchemical papyrus to designate the operation of 'transmutation' itself. What a ray of light! One knows that the word 'poetry' comes from the Greek verb which signifies 'make.' But that does not designate an ordinary fabrication except for those who reduce it to verbal nonsense. For those who have conserved the sense of the poetic mystery, poetry is a sacred action. That is to say, one which exceeds the ordinary level of human action. Like alchemy, its intention is to associate itself with the mystery of the 'primordial creation' . . ." Michel Carrouges, *Andre Breton et les donnees fondamentales du surrealisme* (Paris: Editions Gallimard, 1950). ([Back](#))

(5). Claude Levi-Strauss, "The Effectiveness of Symbols," *Structural Anthropology* (Doubleday Anchor, 1967), pp. 193-95. ([Back](#))

(6). "In a sense, as Husserl says, philosophy consists of the restitution of a power of signification, a birth of sense or a savage sense, an expression of experience by experience which particularly clarifies the special domain of language." Maurice Merleau-Ponty, *Le Visible et l'invisible* (Paris: Editions Gallimard, 1964). ([Back](#))

(7). The story of how he began his shamanistic career, together with the information to follow about fright, payments to the mountains, and practices in relation to the hunt, are quotations from an interview with Mr. Roman Estrada whom I questioned through an interpreter: the conversation was tape-recorded and then translated from the native language by Mrs. Eloina Estrada de Gonzalez, the niece of the shaman, who served as questioner in the interview itself. ([Back](#))

(8). "Finally, the illness can be the consequence of a loss of the soul, gone astray or carried off by a spirit or a revenant. This conception, widely spread throughout the region of the Andes and the Gran Chaco, appears rare in tropical America." Alfred Metraux, "Le Chaman des Guyane et de l'Amazonie," *Religions et magies indiennes d'Amerique du Sud* (Paris: Editions Gallimard, 1967). ([Back](#))

(9). Ibid. ([Back](#))

(10). It is necessary to express one's debt to R. Gordon Wasson, whose writings, the most authoritative work on the mushrooms, informed me of their existence and told me much about them. "We suspect," he wrote, "that, in its integral sense, the creative power, the most serious quality distinctive of man and one of the clearest participations in the Divine . . . is in some sort connected with an area of the spirit that the mushrooms are capable of opening." R. Gordon Wasson and Roger Heim, *Les Champignons hallucinogenes du Mexique* (Paris: Museum National d'Histoire Naturelle, 1958). From my own experience, I have found that contention to be particularly true. ([Back](#))

Bio-receptor Screening and MAO Inhibition

(This site is created and maintained by [Daniel Siebert](#))

In 1993, I sent a sample of salvinorin-A to Dave Nichols at Purdue University. Dr. Nichols was involved in an NIMH funded research program, which enabled him to have the material exhaustively screened by the commercial bio-receptor screening service, NovaScreen™.

The screening results showed no significant competitive inhibition of reference target compounds at any of the following sites tested. The receptor sites tested included those effected by most other major psychoactive drugs.

NovaScreen® Receptor Selectivity Report Nov. 12, 1993	
Receptor/Selectivity	Reference Compound
<i>Neurotransmitters:</i>	
Adenosine	NECA
Alpha 1	Prazosin
Alpha 2	Phentolamine
Beta	Alprenolol
Dopamine 1	SCH 23390
Dopamine 2	Sulpiride
Gaba _a	Muscimol
Gaba _b	Baclofen
Serotonin 1	Serotonin
Serotonin 2	Methylsergide
Muscarinic 3	4-DAMP
Nmda	NMDA
Kainate	Kainic Acid DME
Quisqualate	Quisqualic Acid
Glycine (stry sens.)	Strychnine Nitrate
<i>Regulatory Sites:</i>	
Benzodiazepine (centrl)	RO-151788
Glycine (stry insens.)	Glycine

Benzo(a)azepine (centri)	KO-151/88
Glycine (stry insens.)	Glycine
Pcp	PCP
Mk-801	MK801
<i>Brain/Gut Peptides:</i>	
Angiotensin Ty 2	Angiotensin II
Arg-Vasopressin V ₁	arg-Vasopressin
Bombesin	GRP
CCK Central	CCK
CCK Peripheral	CCK
Substance P	substance P
Substance K	Neurokinin A
Npy	Neuropeptide Y
Neurotensin	Neurotensin
Somatostatin	Somatostatin
Vip	VIP
<i>Growth Factors And Peptides:</i>	
Anf1	ANP
Egf	EGF
Ngf	NGF
<i>Ion Channels:</i>	
Calcium (Type N)	w-Conotoxin
Calcium (Type T & L)	Nifedipine
Chloride	TBPS
Potassium (low conduct)	Apamin
<i>Second Messengers:</i>	
Forskolin	Forskolin
Phorbol Ester	PDBU
Inositol Triphosphate	IP3
<i>Monoamine oxidase inhibition:</i>	
Monoamine Oxidase A	N/A
Monoamine Oxidase B	N/A

Salvia divinorum Epling et Jativa

(Leaves of the Shepherdess)

Jonathan Ott

Eleusis, n. 4, April # 31-39, 1996 *Psychoactive Card* IV

(Original HTML corrected by Arachnid – Italian version omitted)

ORIGINAL DESCRIPTION: *Bot. Mus. Leafl. Harv. Univ.*, 1962: 20(3): 75-76. **AMENDED:** Emboden, *Narcotic Plants* (2° Edition revised and enlarged), 1979:93-94, **AMENDED:** Reisfield, *SIDA, Contributions to Botany*, 1993: 15(3):349-366.

FAMILY: Labiatae.

VERNACULAR NAMES: Mazatec: *Ska Pastora*, *Ska María Pastora*; Náhuatl: *Pipiltzintzintli*, Spanish: *Hojas de la Pastora*, *Hojas de María Pastora*, *La Hembra*, English: *Leaves of the Shepherdess*, *Leaves of Mary Shepherdess*, *Sage of the Seers*, *Diviners' Sage*.

DISTRIBUTION: Endemic to the Mazatec zone of the Sierra Madre Oriental of the Mexican state of Oaxaca.

ECOLOGY: On black soil in ravines close to primary or secondary cloud forest and tropical evergreen forest, 300-1800 m elevation; flowering sporadically from September to May.

BOTANICAL DESCRIPTION: Perennial herb, 0.5-1.5 m tall, flowering stems 1-2(-3) m tall. Stems hollow, quadrangular, flanged angles, hirtellous, green, translucent and crisp. Leaves opposite, elliptic to ovate, apex acuminate to caudate, base attenuate, 10-25(-30) cm long, 5-10 cm wide, glabrous above, below glandular-punctate, irregularly serrate or crenate-serrate margins. Racemes erect, simple, 30-40 cm long, internodes 2-4 cm; cymules having 3-6(-12) flowers; rachis hirsute, glabrate. Bracts ovate, concave, sessile, basally rounded, apex acuminate-caudate, 1-2(-3) cm long, 0.6-1 cm wide, tardily deciduous, mainly violet. Pedicels hirsute, slender, straight, violet, 4-9 mm long. Calyx with subequal lips, 10-12 mm long, glabrate to glandular-puberulent, violet; upper lip 1.5 mm long with 3 major veins. Corolla 28-32 mm long, sigmoid, densely villous with translucent multicellular hairs 0.5-2 mm long, white, glabrous within, lips becoming tinged with blue in age; tube 19-22 mm long, 2 mm high, 1.5 mm wide at narrowest near throat; galea 8-9(-10) mm long; lower lip cupped, 5 mm long and 7 mm wide when flattened, middle lobe emarginate. Stamens glabrous, white, slightly arcuate, 15-16 mm long, rudders 10-11 mm long, entire, anthers 2 mm long; pollen white. Style 27-32 mm long, densely bearded below stigma, white. Gynobase horn 3 mm long, 1.2 mm wide, white, glabrous. Nutlets 1.8-2 mm long, 1(1.2) mm wide at maturity, dark brown, unknown in wild collections [From amendment by Reisfield 1993].

BOTANICAL OBSERVATIONS: The scientific name of the genus comes from Latin *salvus* = safe; the specific name "which means "of the seers", refers to the curious use to which the plant is put by the Mazatec Indians", to wit, as a shamanic inebriant or entheogen in divination, especially of the causes of illness (Epling & Jativa-M. 1962; Wasson 1962). Unfortunately, the original type description (collected by A. Hofmann & R.G. Wasson 8 September 1962 in San José Tenango, Oaxaca, México; Herb.Univ.Cal., Los Angeles; duplicate in Econ.Herb.Oakes Ames) was in error regarding corolla color ("cyanearum" or cyan-blue), which was amended to "pure white" by Emboden in a popular book (Emboden 1979); then more fully amended by Reisfield, who described reproductive parts in detail, including the nutlets, noting that the corolla "lips become tinged blue with age" (Reisfield 1993). This amendment as to corolla color was unfortunately not before three separate color paintings of the plant had been published,

mistakenly showing it with cyan-blue corollas. The first was by Frances Runyan as Plate 50 in the first edition of Emboden's *Narcotic Plants* (Emboden 1972) (in the second edition Emboden amended the description and replaced the erroneous painting with a close-up color photograph of the decidedly white flowers as Plate 40) (Emboden 1979). There were also two separate color paintings by Harvard Botanical Museum artist Elmer W. Smith depicting the flowers as cyan-blue. The first was in Richard Evans Schultes' 1976 *Hallucinogenic Plants*, which even depicted an enlarged, all-blue flower (Schultes 1976); the error being repeated in the French (Schultes 1978) and (pirated) Spanish translations (Schultes 1982). Finally, in their 1980 poster *Plant Hallucinogens*, illustration No. 23 likewise depicted *S. divinorum* with blue corollas (Schultes & Smith 1980). Suprisingly, for such a rare plant, two additional color paintings have been published, correctly depicting the flowers as white: by F. Lucerne Coray on page 55 of Schultes' and Halbert Hofmann's coffee-table book *Plants of the Gods* (Schultes & Hofmann 1979) and by D.D. Dowden in S. Foster's *Herbal Bounty* (Foster 1984)! Besides this plethora of color paintings of an obscure plant, there have also been published two different botanical illustrations, by John Stanwell-Fletcher (Schultes 1967; Stafford 1977) and Irene Brady (Mayer 1977; Schultes 1972; Schultes & Hofmann 1973), plus many black-and-white photographs of the plant (Díaz 1975; Valdés *et al.* 1983, 1987a; Wasson 1963, 1966), and a sketch (Heffern 1974), and the above-cited color photograph.

AGRONOMIC DATA: There exists agronomic controversy over the status of *S. divinorum* as a cultigen. The type specimen was a cultivar, and the botanical discoverer of the plant said it "seems to be a cultigen", noting: "We were on the watch for *S. divinorum* as we criss-crossed the Sierra Mazateca on horseback in September and October of 1962, but never once did we see it. The Indians choose some remote ravine for the planting of it .. whether it occurs in a wild state (except for plants that have been abandoned or have escaped) we do not know" (Wasson 1962). Valdés, who made ethnographic and phytochemical study of this plant his thesis project, has challenged this, stating that his informant Don Alejandro "indicated that the plant grows wild in the fairly inaccessible highlands of the Sierra Mazateca" admitting, however, that all plants he saw were "apparently originally started by humans" (Valdés 1994). Valdés failed to cite Reisfield's thorough botanical and horticultural study of the plant, which concluded that the plant was a cultivar: "Hybridity is suggested, although intermediacy between two known species has not been recognized" (Reisfield 1993), while Epling & Jativa-M. (1962) noted an affinity with *Salvia cyanea* Lamb. ex Benth. Although Valdés had been able to obtain 4 seeds from 14 cross-pollinated flowers (28%), these were killed by overheating in a greenhouse, before viability could be assessed (Valdés *et al.* 1987a). Valdés also noted that D.J. Siebert had obtained viable seed from cultivated plants in Hawai'i (Valdés 1994), but the seedlings were very weak and of dubious viability in wild conditions (Siebert 1993-94). Reisfield found more than 50% of the pollen grains examined from *S. divinorum* to be unviable. He obtained only 11 nutlets from 108 self-pollinations, each potentially yielding 4 fruits, or a success rate of 11/432 (2.5%); while in 190 cross-pollinations, only 24 fruits developed (24/760 or 3%), commenting "at no time was a legitimate pollinator observed visiting flowers", even in a nocturnal "stakeout", although mature seeds thus obtained produced some "vigorous seedlings [which] developed into plants indistinguishable .. from their parents". In his botanical description of the plant, Reisfield noted its habit of "trailing along rocky stream banks, sometimes in running water, rooting copiously at the nodes" (Reisfield 1993).

CULTIVATION: Propagation is vegetative, and the plant requires rich soil and much moisture, tolerating sun if moisture is high. Cultivation is possible in northern latitudes, as, for example Valdés' work in Michigan, transplanting from outdoor gardens into greenhouses in the winter, with 10°C minimum temperature maintained (Valdés *et al.* 1987a). This plant has come to be widely cultivated by North American "basement shamans", and has been commercially available in the United States since the early 1980s (Foster 1984) and circulated non-commercially in the

previous decade (Grubber 1973; Superweed 1972). The so-called "Wasson clone" (from the Hofmann and Wasson 1962 type collection) is the most commonly sold, along with at least one so-called "palatable clone", which is far less bitter than the type clone, and was collected by Bret Blosser in Llano de Arnica, Oaxaca (Blosser 1991-93; Ott 1995b).

ETHNOBOTANICAL DATA: *S. divinorum* is employed as a shamanic inebriant by the Mazatec Indians of the Mexican state of Oaxaca, first described in the ethnographic literature in 1939 by J.B. Johnson, who noted the use of Hierba María in Mazatec "witchcraft", parallel to the use of divinatory mushrooms and morning glory seeds (Johnson 1939). Subsequently described as *Yerba de María* by Roberto J. Weitlaner (1952), it was the great pioneer in shamanic studies R. Gordon Wasson who first collected identifiable material of this novel species, and became the first outsider to sample its visionary powers, in Ayautla, Oaxaca, on 12 July 1961. Wasson described customary ingestion of pairs of the leaves, known as *Ska Pastora* or *La Hembra*, by chewing and shallowing, and also described preparation of a visionary potion by making an aqueous infusion/suspension of the leaves *via* hand squeezing, much as Weitlaner had described "rubbing" the leaves in water (Wasson 1962; Weitlaner 1952). Wasson also photographed use of a *metate* to express and infuse the leaves (Hofmann 1990; Wasson 1963, 1966), giving a dose as 6-68 leaves; whereas Weitlaner had said 50-100. Ott reviewed reports of pharmacology of the leaves, with a dose being described in a dozen sources as varying from a low of 6 to a high of 240 leaves (Ott 1995b). Building on the pioneering ethnographic work of Wasson, the group of J.L. Díaz and L.J. Valdés have conducted the most detailed ethnobotanical studies of this plant (Díaz 1975, 1977, 1979; Valdés 1983; Valdés et al. 1983, 1987a). Although shamanic use of *S. divinorum* has not been observed outside of the Sierra Mazateca, Wasson proposed that the plant represented a mysterious Mexico or Aztec entheogen, known in Náhuatl as *pipiltzintzintli*, the "most noble little prince" (Wasson 1963). It was further suggested by Emboden that the plant was depicted on the headdress of a deity found in the Mayan *Dresden Codex* (Emboden 1983). Although Valdés, following Aguirre Beltrán and Díaz, alleged that *S. divinorum* couldn't have been *pipiltzintzintli* (Aguirre Beltrán 1963; Díaz 1979; Valdés et al. 1987a), alternate candidates proposed are impossible - the first, *Cannabis sativa* L., is a post-conquest introduction to México (Schultes & Hofmann 1980); while the second, *ololiuhqui* (seeds of *coaxihuitl* or *Turbina corymbosa* (L.) Raf.) was identified by one primary source of information on *pipiltzintzintli*, Friar Agustín de Vetancurt, in his 1698 *Teatro Mexicano*, as a plant sometimes mixed with *pipiltzintzintli* (Vetancurt 1698). My recent review of the pertinent evidence concluded that *S. divinorum* "remains our best guess for the identity of the lost Aztec entheogen" (Ott 1995b). I also cited the rather crude and demonstrably inefficient Mazatec method of preparing the entheogen and its lack of a true indigenous name in Mazatec (noting its association with sheep, a post-conquest introduction supporting its identity with *pipiltzintzintli*, since other Mesoamerican Indians were the likeliest source of this introduction (Ott 1995b). Nevertheless, until the plant is found elsewhere or in truly wild conditions, or until the hypothetical parents of this presumed hybrid are identified, it will remain an ethnobotanical enigma. Wasson noted that *S. divinorum* was *la hembra*, "the female" in a family including *el macho* "the male", *Coleus pumila* Blanco and *el nene* or *el ahijado*, "the child" or "the godson", *Coleus blumei* Benth. - since both are Asiatic species introduced post-conquest to Mesoamerica, this datum strengthens the argument for non-native status of *S. divinorum* in the Sierra Mazateca (Wasson 1963).

BIOCHEMICAL DATA: Like many other members of the genus, *S. divinorum* contains unusual terpenoid compounds. Following up the finding of salviarin and splendidin, novel trans-clerodane diterpenes, in the Brazilian species *Salvia splendens* Sellow ex Roem. et Schult. (Savona et al. 1978, 1979), the Mexican group of Alfredo Ortega, using no bioassay, isolated a novel trans-neoclerodane diterpene from *S. divinorum*, naming the compound salvinorin, and determined its structure by X-ray crystallography (Ortega et al. 1982). Two years later, the

American group of Valdés, immorally using a modification of “Hall’s open field in mice,” isolated the same compound, as presumed visionary principle of *S.divinorum* leaves, along with its inactive desacetyl derivative, giving these compounds the name divinorin A and divinorin B (Valdés *et al.* 1984). Again, structure elucidation was carried out by X-ray crystallography, confirming the structure established by the Ortega group, and in a note added in proof to their 1984 article, the Valdés group conceded priority, noting the correct names for the compounds were salvinorin A and salvinorin B. Valdés subsequently reported his isolation from *S.divinorum* of the ant-repellant loliolide, originally from *Lolium perenne* L. and of unknown human pharmacology (Valdés 1986). Finally, the absolute stereochemistry of salvinorins A and B was established by collaborators of Valdés (Koreeda *et al.* 1990). Unlike the well-known culinary sage, *Salvia officinalis* L., some strains of which contain the volatile psychotropic terpenoid thujone (Tucker *et al.* 1980), steam distillation of fresh leaves of *S.divinorum* failed to detect thujone (Ott 1993). The volatile nature of this compound, famous psychoactive agent in *Artemisia absinthium* L. and *absinthe* liqueurs, makes culinary sage potentially psychoactive by simply *smelling* the fresh herb (Duke 1987).

TRADITIONAL MEDICINE USES: Besides its primary use in shamanic divination by the Mazatecs of México, *S.divinorum* infusions are also applied topically by the Mazatecs. Weitlaner described bathing the patient in the same infusion of the leaves that was previously ingested (Weitlaner 1952), and the Valdés group described putting the extracted leaf residue on the patient’s head as a cataplasm (Valdés *et al.* 1983). The Valdés group also documented curative use of an infusion of 4-5 pairs of fresh or dry leaves to cure or regulate digestive problems like diarrhea, as a stimulant or tonic for the elderly, against headache and rheumatism, and to cure a magical illness called *panzón de barrego* [sic] “big lamb’s belly” (Valdés *et al.* 1983). Significantly, Friar de Vetancurt mentioned that leaves of *pipiltzintzintli* were used both in the preparation of a divinatory potion and were applied topically as a poultice, a strong argument in favor of the identification of *pipiltzintzintli* as *S.divinorum* (Vetancurt 1698).

PHARMACOLOGICAL DATA: In modified “Hall’s open field” assays, salvinorin A and the active extract fractions of *S. divinorum* were said to have sedative effects on mice and to provoke effects like mescaline, secobarbital, an ether extract of *Cannabis sativa* L. and another labiate terpenoid, the hypotensive colforsin or forskolin (Valdés *et al.* 1984, 1987b). Valdés later noted that further testing established that secobarbital, colforsin, and the *Cannabis* extract all sedated the mice, while mescaline and salvinorin A “interrupted (decreased) animal activity without ... true sedation (Valdés 1994). Besides involving an immoral use of helpless laboratory animals where ethics would rather have dictated self-experiments by the principal researcher himself, it is evident that this bioessay was too inspecific, and it is inexplicable why the Valdés group, despite rather extensive psychonautic bioassays with the leaves themselves, failed to employ a human psychonautic bioassay to guide their phytochemical work, or at least to conduct psychoanautic bioessays of salvinorin A to verify that it represented the visionary principle of the leaves. Definitive proof that salvinorin A represented the entheogenic active principle had to wait another decade, when a group of “basement shamans” in California were able to isolate a salvinorin A-enriched crude precipitate (which I shortly thereafter established was about 50% salvinorin A), demonstrating by vaporizing and inhaling the compound that it was indeed the visionary principle of the leaves of Mary Sheperdess, seemingly active at about the 1 mg level! Subsequent tests showed that the threshold for activity of the vaporized, inhaled compound was 200 mcg, making this an order of magnitude more potent than psilocine, hitherto the most potent natural product entheogen (Fischer 1963). Doses as high as 2.6 mg were administered by this route, with bizarre and overwhelming out-of-body experiences common above the 1 mg level (Siebert 1994). These “basement shamans” had already established that the whole leaf was far more active *via* the “quid method”, that is, chewed and held in the mouth like *coca* with no swallowing, than chewed and swallowed as the Mazatecs do -

10 leaves chewed by the quid method were distinctly active in all volunteers, whereas the same dose blended in water and swallowed was inactive in all subjects (Siebert 1994). (Young hipsters in México City, who returned from sojourns from mushroomic tourism in the Sierra Mazateca to México City with dried leaves of *S. divinorum*, were observed to smoke these as a sort of marijuana substitute, and I established in 1975 that the smoked leaves were indeed active (Díaz 1976; Ott 1993). The dried leaves may also be rehydrated and chewed by the quid method (Pendell 1995). Although Siebert found orally-ingested capsules of crystalline salvinorin A inactive at doses up to 10 mg, and 2 mg doses of buccal spray of a dilute ethanolic solution of salvinorin A to be weakly active (Siebert 1994), I found sublingual application of salvinorin A in acetone and dmsO (Ott 1995c) to be highly active, with a threshold for physical effects of 100 mcg, definite psychoactivity at 250-500 mcg and visionary activity above 1 mg. My review of some 2 dozen reports of human pharmacology of *S. divinorum* and salvinorin A estimated the following descending order of potency for the different routes of ingestion: sublingual salvinorin A $\geq$ vaporized salvinorin A $\geq$ chewed leaf, quid method $\geq$ chewed leaf, swallowed $\geq$ infusions of leaf (Ott 1995b). It was difficult to place the smoked leaves in this scheme, as for many people (about half, in a pair of informal tests involving some 20 volunteers at a time) they are inactive, and for some elicit only a mild effect after several inhalations, which subsequent smoking fails to augment. The pharmacological data I reviewed involved aqueous infusions of 6-160 leaves; chewed and swallowed doses of 26 leaves; ingestion by quid method of 6-26 leaves; smoking of 1-2 leaves; vaporized and inhaled salvinorin A doses of 200 mcg - 2.6 mg; and sublingual doses of 100 mcg-1.0 mg salvinorin A (Ott 1995b). Owing to its unique chemistry (being non-nitrogenous, unlike the great bulk of known visionary compounds, which are alkaloidal), it is to be expected that salvinorin A pharmacology involves novel neurochemistry, perhaps even interaction with a yet-unknown receptor in brain. Indeed, salvinorin A was tested on 42 known bioreceptors in a procedure called *NovaScreen*® and there was no significant competitive inhibition of reference target compounds on any receptor. There were 15 neuroreceptors tested: adenosine, alpha 1 and 2, beta, dopamine 1 and 2, GABA_A, GABA_B, serotonin 1 and 2, muscarinic 3, NMDA, kainic acid, quisqualic acid and glycine; plus MAO_A and MAO_B (Siebert 1994).

EFFECTS: Wasson compared the effect of the leaf infusion to psilocybian mushrooms, noting that it "...was less sweeping, and lasted a shorter time [...] .. it did not go beyond the initial effect of the mushrooms - dancing colors in elaborate three-dimensional designs" (Wasson 1962). Valdés emphasized the need for silence and darkness for full effects to manifest, and noted the perceived "reality" of vivid and "amazing" "hallucinations" described as being "quite complete, being visual, oral, aural, and tactile" (Valdés 1994). Following inhalation of vaporized salvinorin A, Siebert stated: "people report having visions of people, objects, and places. With doses above 1 mg, out of body experiences are frequent" (Siebert 1994). Most people exposed to higher doses of the vaporized compound report immersion in bizarre, non-Euclidian dimensions or geometries, often described as curved, tubular or spherical; not a few find the experience to be terrifying; many note that the experience is unique, not comparable to other entheogens. Duration of effects is a function of route of ingestion, with the swallowing of the leaves or leaf infusions producing effects lasting from one to a few hours after a latency period of 15-45 minutes (Valdés et al. 1983). The quid method produces effects commencing in about 10 minutes and lasting 1-2 hours. Vaporized and inhaled salvinorin A exerts an effect in 10-15 seconds, building rapidly to a peak lasting only about 5-10 minutes, then subsiding over 20-30 minutes (Siebert 1994). Sublingual salvinorin A in solution begins to be felt in about 90 seconds, reaching a maximum effect at 10-15 minutes, and lasting 1-2 hours. Smoking dried leaves typically exerts a mild effect at 10-15 minutes, and lasting 1-2 hours. Smoking dried leaves typically exerts a mild effect, felt after 5-6 inhalations and lasting 1-2 hours. Effects are in all cases virtually identical (Ott 1995b).

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features: from TRP 1

Sage Wisdom: Salvia divinorum Branches Out

by Robert Campbell

The strange mint from the mountains of Mexico is taking the world by storm. Some say it is the most powerful entheogen ever found, others say it does nothing. Robert Campbell uncovers the truth.



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An intriguing member of the enormous botanical family Labiaceae (mint) has recently exploded onto the entheogenic scene. Due in part to a wealth of new information on the subject, as well as the legal availability of both dried leaves and live cuttings, *Salvia divinorum* has become a center of interest for a new breed of psychedelic explorers. Through knowledge shared on the Internet, by word of mouth, and in recent books, this humble, rare plant from the highlands of Mexico has been able to rapidly propagate itself throughout the entire world.

Salvia divinorum has been known by a host of other names through time, including Yerba de María ("Herb of María"), hojas de la Pastora ("leaves of the Sheperdess"), Hierba de la Virgen ("Herb of the Virgin") and most commonly, simply "Salvia." The English translation of the Latin name *Salvia divinorum* is also commonly used, with some referring to the plant as



"Diviner's Sage" or "Diviner's Mint."

In *Plants of the Gods*, Hofmann and Schultes describe *Salvia* as "a perennial herb 3 ft (1 m) tall or more, with ovate leaves up to 6 in. (15 cm) and finely dentate along the margin. The (white flowers, bluish in old age) borne in panicles up to 16 in. (41 cm) in length, are approximately 5/8 in. (15 mm) long."

Account

" ... A typical element of the *Salvia* experience seems to be spirals and recursions. During one song, I was in a kind of tube which wound into a spiral and became more and more complex in more and more dimensions. I was completely stuck in this thing and thought I'd never be able to escape. Then the song stopped, and I was free."

Traditional Usage

Little is known about *Salvia*'s traditional use as an entheogen. It has been suggested as the most likely candidate for *pipiltzintzintli*, an ancient Aztec shamanic preparation. Some researchers dispute this claim, believing that *pipiltzintzintli* is in fact *Cannabis sativa*. At any rate, the Mazatec Indians of Oaxaca, Mexico, are the only people known to use *Salvia* in curing rituals at the present time (with the exception of recent experimentation by Western enthusiasts).

In the autumn of 1962, R. Gordon Wasson, (famous for having brought the ritual use of psilocybian mushrooms into the public eye with his *Life* magazine article), and the noted chemist Albert Hofmann took part in an expedition attempting to secure a sample of the magical plant for chemical analysis. The Mazatec curanderas (shamans) who had helped Wasson find the famous mushrooms were again very generous, and introduced the plant to Wasson and Hofmann's party. After securing the leaves, it was agreed that a *velada* (divining ceremony) would be held. Hofmann presents the details of this ceremony in a wonderful essay entitled "Ride Through the Sierra Mazateca in Search of the Magic Plant 'Ska Maria Pastora.'"

It was not surprising that the ceremony was very similar to those involving psilocybian mushrooms that Wasson had previously participated in, as the plant and the fungi seem to be used almost interchangeably in divining ceremonies. The velada did not begin until late at night. Candles and copal incense were lit, and pairs of leaves were laid out for each participant, with the curandera judging the dose —six pairs for both herself and Wasson. Hofmann was ill, so he refrained from ingesting the leaves, opting instead to just take notes.

The curandera crushed the leaves with a stone metate, and the liquid was squeezed into cups. These cups were, as a final measure, bathed in copal smoke. Before consuming the potion, the participants were asked to make vows regarding their faith in the truth and holiness of the ceremony. The bitter potion was ingested, and, with the flames of the candles snuffed, the journey began.

The results of the velada were certainly intriguing enough to warrant further investigation by modern researchers. After 20 minutes, one member of the party saw "striking, brightly bordered images." During a later ceremony, the whole party, under the guidance of famed curandera Maria Sabina, took psilocybian mushrooms while Hofmann alone took a potion made of the leaves. Hofmann described the effects of the potion as a "state of mental sensitivity and intense experience." He did not, however, experience any hallucinations.

Account

"I closed my eyes and lost all sense of my physical self. I roared through a void. I was surrounded by a space of myriad expanse, yet there was nothing there. I was exploding in all directions at once, expanding, twisting outward, yet there was nothing through which to be moving. I flew, I floated, I flourished. The dark matter sang with energy. Just as the abyss about me had a form, so its silence was an ecstatic polyphony. My senses rang with delight."

Modern History

For some time the active ingredient in *Salvia divinorum* remained unknown. Because it bore no resemblance to any other known entheogen, researchers were baffled. However, thanks to many years of dedicated underground research, the primary active ingredient of *Salvia divinorum* has now been identified as salvinorin A (C₂₃H₂₈O₈) —the most potent naturally-occurring psychedelic ever discovered, being active in doses as small as 100-200 micrograms. This is only a slightly higher dose than is required for LSD-25, which is considered to be one of the most potent psychoactive chemicals known.

Methods of Ingestion

Salvia divinorum can be ingested in a number of ways. Tradition would have the practitioner drinking a liquid as explained above, or else chewing a quid of leaves for some time. Modern explorers, however, have stumbled upon other techniques which bypass the bitter taste and the length of time which the chewing must occupy. The first and simplest of these is to smoke the dried leaves. The psychonaut with more time and patience can prepare an extraction which is extremely potent, perhaps dangerously so (see precautions below).

Smoking seems to be the most effective and enjoyable method of using *Salvia divinorum*, and is particularly suitable for first-time users. If the reader is interested in taking the leaves orally or preparing an extract, resources for further research can be found following this article.

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A Smoked Entheogen

An ample dose for smoking *Salvia divinorum* is roughly two medium leaves, dried and crushed. These are loaded into a pipe (a waterpipe being preferred), and normal smoking procedure is followed. Although casually smoking the leaf is pleasant and will yield a mild psychoactive experience, experimentation has revealed a certain smoking technique which seems to be particularly effective at producing entheogenic results.

First, as with all entheogens, set (psychological environment) and setting (physical environment) need to be established. When using any psychoactive compounds for experimental or spiritual purposes, an environment approximating sensory deprivation always provides spectacular results. While the distortions of music, light, and other media can be amusing, they are quite trivial when compared to a breakthrough Salvia experience in a dark and quiet room. Some explorers find that a bathroom or walk-in closet are convenient chambers in which to perform the ritual.

One should keep in mind that walking after smoking *Salvia divinorum* is difficult at best, so cushions or a bed are recommended. One method to insure darkness and comfort is to smoke the leaf while sitting on a bed, and then lie down and apply a blindfold as the first effects are felt. It is advisable to have an assistant present to remove the pipe and flame source after actual ingestion occurs. Once a dark, quiet, and comfortable environment has been created, one is ready to smoke. A deep inhalation and even deeper exhalation help clear the lungs and prepare them for the heavy load to follow. It is imperative that the practitioner ingest as much smoke as possible in a single inhalation. With a slow but steady rhythm, the smoker should take the smoke deeply into the lungs. If you hold the smoke long enough, you should begin to feel the effects even before you exhale.

The Salvia leaf produces a relatively cool smoke, particularly when filtered through water, which does not seem to significantly diminish the potency. The smoking

process will likely be enjoyed by all but the most sensitive of smokers. With correct setting, technique, and potent leaves, the single hit smoking method should be successful. However, those with a large body mass or resistance to entheogenic effects would do well to repeat the above procedure as many times as necessary. It should also be noted that many experimenters, especially during the first exposure to Salvia, have a difficult time "breaking through" and often claim that nothing happened.

Account

"I had the impression of being in a lunar emerald labyrinth that self-crystallized before my eyes. There were not full blown entities, but there was definitely creature-like and organic movement. It was silent, a visit to the ice palace, like watching winter pass in fast forward, a self-transforming orchestra of icicle geometries. Extremely pleasant to the eyes - entrancing really. It made for a half hour of brilliant elation and then began to recede, melt away, like the gossamer layers of glaze on a fine oil painting diffusing one by one, until I was left with only the unrefined vague gestalts which all too often inhabit my inner world."

Duration of Effects

Within 30 seconds of the initial inhalation, definite changes in the smoker's perception should be apparent. As the salvinorin A enters the bloodstream, the smoker will feel a humming and tingling which ripples in waves all over the body. The "peak" of the experience will occur within a minute, and typically continue for as long as two to three minutes. The sensation abruptly tapers off after this point, leaving one quite near baseline within seven

"I had the impression of being in a lunar emerald labyrinth that self-crystallized before my eyes ... It was silent, a visit to the ice palace, like watching winter pass in fast forward, a self-transforming orchestra of icicle geometries."

to ten minutes, and completely back to normal within twenty minutes to a half-hour.

There have been no known reports of users experiencing pain or discomfort when using the plant as described above. However, it should be noted that in some cases the smoker may experience small headaches or moments of slight dizziness which can last the rest of the day. This is generally perceived as a feeling of slightly altered or enhanced awareness, accompanied by the presence of unfamiliar energies in the body and mind.

Walking immediately after smoking *Salvia divinorum* is not advised. Severe distortions of time and space are the hallmark of the plant's effects on the human nervous system. It may appear that one's vision or center of gravity is being sucked towards the floor, or as in one amusing case, towards a wall. An extremely curious explorer might simply wish to stand and take a step or two to verify this effect, but please understand that many have already found out the hard way that stairs are an inappropriate place to enjoy *Salvia divinorum*'s effects.

A Precaution

Driving or operation of heavy machinery should not be considered safe until at least an hour of recovery has passed. As always, exercise caution when sampling this plant, as it is capable of very powerful alterations of perception. Please be warned that this is the wrong plant to use in public or during recreational activities. As *Salvia divinorum* is currently not scheduled, some have suggested it as a likely Cannabis substitute. However, the two are certainly not interchangeable.

Typical Effects of Smoked Salvia

Salvia divinorum, like all entheogens, has different effects on different users. Still, some common themes present themselves. One of the most striking features of a breakthrough Salvia experience is the distortion of linear time. Sometimes, it seems as if one simply escapes linear time altogether and finds that all temporal

coordinates are randomly accessible instantaneously. Visual distortions are also reported, but they tend to be vague, slippery, and ambiguous.

Many users report contact with hyperspatial entities, spirits, or intelligences, but the nature of these entities is rarely constant across different experiences. On the contrary, it seems the plant uses the personality of the explorer to present its message. Some have found that Salvia transports the practitioner to a state of meta-consciousness which seems to be both ancient and familiar —possibly a reflection of the state which one experiences before birth and after death. It has been noticed that the distinction between the mental and physical becomes rather fluid after ingesting Salvia. The mind seems to be made of physical fields which can be manipulated like muscles. By experimenting and flexing these mental muscles, one will eventually become adept at navigating through the Salvia dimension.

Another persistent theme in Salvia trips is that of rotation. Several explorers have reported a feeling that is similar to the lateral rotation which excessive alcohol consumption brings about, yet not as nauseating. At times this rotation has been so powerful as to form an "edge" somewhere inside the body. I have at times even felt this edge scraping along the roof of my mouth. While startling, these effects are generally not unpleasant. Another common observation in many Salvia trips is that some kind of tube or flexible tunnel appears which leads away from the explorer like a hallway. Some have related these tubes to spokes on a wheel, others as doorways to alternate dimensions.

One of the most striking features of a breakthrough Salvia experience is the distortion of linear time. Sometimes, it seems as if one simply escapes linear time altogether and finds that all temporal coordinates are randomly accessible

There don't appear to be any long-term physical or psychological side-effects from smoked *Salvia divinorum*. It is over quite quickly, and many smokers have, in times of anxiety, successfully aborted a deep Salvia trip by just sitting up and "shaking it off." In fact, as the Mazatec suggested to Wasson, the correct attitude of acceptance and faith seems imperative in being able to make contact with the plant's deeper essence.

Account

"When I exhaled, I received a flood of colorful visions, swirling patterns of light against a dark space-like background. This swirl formed a tunnel, which led from somewhere in front of me to "behind" my eyes. By thinking about it, I could move my perspective a little bit. My peripheral vision and imagination were filled with what seemed like two beings. One was old and male, one was young and female. They were encouraging me to look straight through the tube and align my center of vision with it. They were saying 'a little to the right, come on, don't wait until you are dead to see this. It is great!'"

On Breaking Through

As mentioned earlier, many people attempt to smoke *Salvia divinorum* and fail to achieve any noticeable effects. One can only speculate as to why this occurs. It is certainly possible that smoking technique may be responsible for the success some enjoy, yet as the technique is so simple this is not very probable. It is more likely that the Salvia experience is simply a very fragile trance, and those who are more open to it are likely to experience deeper effects. It is possible that prior exposure to novel psychic states aids in the attempt to access the Salvia dimension, yet several seasoned explorers have nonetheless reported failure. It seems that as with Cannabis, many people simply need to "learn" to receive the effects by performing several attempts, usually achieving success after four or five.

It is also suspected that some leaf samples are either

less potent to begin with, or that they lose potency when not stored properly. Upon securing some particularly potent leaves and realizing their effectiveness, they were shared with several people interested in the plant's effects. After being informed of proper technique, a nearly uniform success rate was achieved, with several of the experimenters reporting utter amazement at the power of the plant.

Conclusions and Further Precautions

Taking into account the frequency of "hit or miss" experiences reported with *Salvia divinorum*, it is not surprising that it has remained relatively unknown for so long. Many have speculated that Salvia is not psychoactive in any way, but that it merely acts as a placebo. Others have argued that Salvia is only mildly psychoactive, and that its effects are usually exaggerated. However, with the successful isolation of salvinorin A, Salvia's psychoactivity can no longer be doubted.

The effects of pure salvinorin A are quite intense. When smoked, the amount of salvinorin A that would fit into a glob on the tip of a needle could easily put a grown man into near catatonia in seconds. The effects fade within minutes, but since such a small amount is needed to produce such an enormous effect, many are wary that some under-cautious explorer will overestimate the necessary dosage. Although no lethal overdoses have been reported from Salvia or salvinorin A, many still fear that widespread distribution of pure salvinorin A will inevitably lead someone into an overdose or a bad accident. Let us hope this is not the case. *Salvia divinorum* makes a lovely house plant, and is currently perfectly legal to both cultivate and possess. Your respect for the plant and its responsible usage will ensure that it stays this way.

The accounts of *Salvia divinorum* ingestion were taken from the Lycaeum Trip Report Archive, which can be located at <http://www.lycaeum.org>. Note that these reports are taken out of context, and the serious



researcher would do well to read the originals in their full form.

[Robert Campbell](#) an ethnobotanical explorer specializing in collecting information regarding hyperspatial entities and intelligences.

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articles: TRP 1 (Summer, 1997)

Cultivating Diviner's Sage

by Will Biefuss

A step by step guide to cultivation, propagation, and keeping your Salvia plants happy

SALVIA DIVINORUM IS A MEMBER of the mint family which also includes such familiar herbs as oregano and basil. There are dozens of Salvia species, but Salvia divinorum is the only one known to contain the psychoactive diterpenes salvinorin A (at 96%) and salvinorin B (at 4%). Salvia has hollow, square stems with winged edges. The stems are not very sturdy, but with support, the plant can grow to eight feet tall. Filtered sunlight is best, and the plant likes plenty of water and humidity. It rarely sets seed, and when it does the seeds are usually not viable. In the wild, the plant propagates by falling over and sending out roots where it touches the ground. In a high humidity environment, it is not uncommon to see roots forming on the stem even before the plant has fallen over. These root formations make cuttings an easy method of cultivation.

Cutting & Transplanting

To take a cutting, first cut off a branch tip that has four to six sets of leaves on it with about four inches of stalk below that. Place the cutting in water so most of the bare stalk is covered - tap water is fine and you don't need to add any nutrients. The cutting may wilt for a day or two, but should recover nicely. Mist the cutting frequently or keep it in a high humidity environment to ease the shock of being cut. In summer wait until the evening to take cuttings to prevent excessive wilting.

In about one week nodes will appear on the stalk where the roots will eventually emerge. In another week the roots will appear and grow to a length of 1/4" to 3/4" long. This is the time to transplant the cutting into soil. Keeping the cutting in water beyond this point will deprive it of nutrients, and longer roots are more susceptible to damage during transplanting.

Transplant the cutting into a medium sized pot using either commercial potting soil or your own formula. I make a mixture of one part each compost, peat moss, sandy loam, and a half part perlite. *Salvia divinorum* likes a friable soil rich in humus and with good drainage, so avoid heavy soils with a lot of clay. The plant also likes a lot of root space, so re-pot often for maximum growth. When you see growth starting to slow down, or the plant looking ragged, it's probably time to re-pot.

Temperature & Seasons

The ideal temperature is in the 60 to 70 degree range, but my plants have survived hot spells of 100 degrees and night time chills as low as 35 degrees. In hot weather make sure the plants have enough shade and plenty of water with frequent misting. In the summer I keep my plants on my deck and under 60% shade cloth. I have misters that come on six times a day for one minute, which is long enough to wet all the foliage. The misters are controlled by an electronic timer that screws onto my outside faucet.

The plants can put on four to five feet of growth during the six months they are outside. I have heard that the salvinorin A content is twice as high in the leaves during the summer, but this is anecdotal information. In the fall, growth slows as temperature and light levels decrease. If the temperature falls below freezing, the plant will immediately turn black and die. If the root ball has not frozen, the plant can grow back - often quite prolifically because it has a large root system supporting the new growth. I know it's time to bring my plants inside when the leaves start to blush red from the cold

nights. This reaction will disappear after a few weeks of being indoors.

Flowering

Plants will flower in the fall when there are about ten to twelve hours of light a day. If you are bringing your plants inside under artificial light, you can prevent flowering by increasing the light to fourteen to sixteen hours a day. The plants will then go back to vegetative growth and put their energy into leaf production. I enjoy the flowers, so I keep my lights on for only twelve hours a day and let the plants go through their cycle. Each plant sends up a spike that can grow to be a foot in length, filled with many small bluish white flowers. The flowers have a very delicate, spicy scent.

Each flower spike will last about a month, but if you have many plants in different phases of flowering, the whole process can last two to three months. I know people who have grown *Salvia divinorum* for years without their plants ever flowering, even though the plants go through a period of shortened day length. The plants tend to get leggy during flowering, lose some of their lower leaves, and in general look a little ragged. Once flowering is over, start increasing the light cycle and the plants return to vegetative growth. Light can be increased to as much as eighteen hours a day for maximum growth. Anything beyond this can be detrimental to the plants.

Grow Lights

I am not a big fan of the high priced fluorescent grow lights marketed under such names as Vita Lite, Agro Lite and GroLux. One of these bulbs costs about \$15. Five or six standard fluorescent bulbs can be purchased for this price and will do just as well. Fluorescent bulbs emit light predominantly in the blue spectrum which encourages leaf and stem growth, but are low in red light which promotes flower development. Unlike Cannabis, where the goal is flower production, the aim with *Salvia divinorum* is leaf production, so fluorescent lights are fine. Of course natural sunlight is best, but unless you have a greenhouse or a sunny location indoors,

fluorescent bulbs will maintain your plants through the winter until you can get them back outside in the spring.

High Pressure Sodium (HPS) or Metal Halide (MH) lights can also be used. They come in 400w and 1000w sizes. Unless you have a large area to cover, the 400w is plenty. A 400w MH system costs about \$200 and puts out as many lumens as twenty fluorescent bulbs. This fixture would provide enough light for an eight by eight foot growing space. However, you need to be careful to keep the light at least two feet above the tops of the plants. If the leaves start to blush red, then the light is too close. Leaves will lighten in color when exposed to high light levels; this is fine and does not affect potency. If you do use one of these lights, your plants will require more humidity as the extra heat the lights give off will quickly dry out the leaves. HPS lights are higher in the red spectrum and emit a golden light, MH lights are more balanced and are usually better for use with *Salvia divinorum*.

Humidity

One fallacy often heard about *Salvia divinorum* is that they need a lot of humidity to survive. In fact the plants do enjoy high humidity, and will achieve optimum growth if grown in these conditions, but they can be grown successfully in a low humidity environment with a few simple steps.

The trick is to slowly acclimate the plant to a lower humidity environment over the course of several weeks. If you have ordered a cutting by mail, chances are good it came from a high humidity environment in a greenhouse. Give it high humidity initially by misting it often or placing it in a tent with a humidifier, but slowly reduce the humidity over the course of the next month. The plant will do just fine, and will be much less hassle for you. In the winter when my plants are indoors, I cover the walls with plastic sheeting and spray the plants three times a day with a pump-style tank sprayer. This takes less than fifteen minutes a day and I never have a problem with leaf edges turning brown - the typical sign

that the humidity is too low.

If you are going to grow your plants in a high humidity environment, don't make the mistake of thinking that you don't need to water them much. They still require regular watering even with humidity levels in the 90% range. I do not like using tightly sealed tents or other grow chambers, these do not allow for a healthy flow of air and such stagnant conditions encourage the growth of molds and bacteria.

Pests & Prevention

The most common pests of *Salvia divinorum* are whiteflies and aphids. Both of these insects live on the underside of leaves, preferring the new growth on the top half of the plant. Aphids will also cluster on the stems. Whiteflies are small insects with bright white wings. Their pupa are light green and look like small grains of rice. All stages suck on plant juices, and heavily infested plants will yellow and grow poorly. If the infestation is left unchecked, the plants can die from a black sooty mold that grows on the honeydew that the whiteflies and aphids produce.

I have had good results combatting whitefly (and to a lesser degree aphids) simply by spraying the underside of the leaves with a solution of one teaspoon liquid castile soap to one quart water. The soap breaks down the insects' protective coating and causes them to drown. The plants can be rinsed off the following day with clean water. You will want to repeat this procedure once a week for a couple of weeks to kill any pupa that survive the initial spraying and grow into adults.

Aphids are a little more resistant to a simple castile soap spray, so I recommend using insecticidal soap on them. These soaps contain salts of fatty acids and are quite safe to use, even within days of harvest. The directions say the soap can be left on, but I wash the leaves off the following day after application just to be safe.

There are some biological controls that work wonderfully.

The parasitic wasp *Encarsia formosa* is very effective against whitefly. These tiny wasps are barely visible to the eye. They lay their eggs inside developing whitefly pupa, so one of their young hatches out instead of the whitefly. For aphids, try ladybugs or *Aphidoletes aphidimyza* (see source on page 35 for these).

I fertilize my plants about once a month with fish emulsion when they are outdoors in the summer. In the winter I use Stern's Miracid as *Salvia divinorum* likes acidic soil. Feeding a lot of nitrogen to your plants will attract more problem insects to them, so cut back on fertilizing as part of the strategy to bring pests under control. lifespan.

For all practical purposes, the lifespan of a *Salvia divinorum* plant is about five to six years. The plants get woody as they age, growth slows, and they become more brittle and start to fall apart. If they have been staked and prevented from falling over and rerooting, then it is time to take some cuttings and start again. Cuttings from an old plant will show the same vigor as cuttings from a younger plant.

Preparing the Leaves

Salvia divinorum leaves should be dried in a food dehydrator on a medium high setting (130-140 degrees). At this temperature, drying will take between one to two hours depending on the size of the leaves. I remove the mid ribs on the large leaves and they never take more than one hour to dry. Drying at lower temperatures causes the leaves to lose their green color and turn brown. The leaves are 90% water, so ten grams of fresh leaves equals one gram of dried material. It takes a lot of fresh leaves to produce one ounce of dried leaves; a gallon size plastic bag stuffed full with leaves weighs only two ounces.

Once dry, I push the leaves through a sieve to powder them, then pack the powder tightly into glass vials and store in the freezer. The potency of salvinorin A will be retained for many years this way. Fresh leaves can be

stored in the refrigerator for a few days before losing potency, but be sure to keep them in a plastic bag with a damp paper towel. Freezing fresh leaves does not work, as when thawed they turn into a slimy mess. Leaves can be juiced using a wheat grass juicer and then frozen for long term storage. When thawed, the juice is held in the mouth as is done with the fresh leaves. Dried leaves can be reconstituted by soaking in a small amount of water and then chewed.

Since *Salvia divinorum* is one of the rarest of all plant entheogens, it is my hope that many people will choose to cultivate this plant. It was almost driven into extinction once, so let's work to preserve this valuable plant ally for future generations to enjoy.

Will Biefuss is the author of the *Psychedelic Sourcebook*, a resource guide to businesses of interest to the psychedelic community.

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Salvia divinorum

Diviner's sage

This cultivated Mexican mint species has a long history of use by the Mazatecs.

Most users agree Salvia divinorum is quite unique, and some find its effects unsettling. Its active principle, salvinorin A, is structurally unique among psychoactive drugs, and receptor binding studies have revealed nothing, which could indicate a previously unknown pathway in the brain.

The plant is native to Mexico. It is known only in cultivation, and it rarely produces seed, suggesting a chance unstable hybrid, although the genetics have not yet been investigated. Salvia divinorum is traditionally used for, among other things, divination--hence its scientific name.

Botanical Suffix Epling et Játiva-M.

Habitat Native to the Sierra Mazateca, Mexico. The tiny number of clones in circulation have adapted well to cultivation by enthusiasts in cooler, drier climates throughout the world.

Dosage:

- [Smoked](#)

The dosage required to obtain first effects from salvia varies widely. Some people report strong effects the first time they smoke the dried leaf in a pipe, others report no effects after smoking large quantities of concentrated extract.

A common method is to smoke the dried leaf through a bong or waterpipe -- several bowls as quickly as possible. If this doesn't work, or the thought of it insults your lungs, standardized 5x (or stronger) extract can be used. Once a breakthrough is achieved, subsequent use may require less material.

Smoked salvia trips can be extremely intense -- comparable to DMT -- and it is wise to have a sober sitter present. This is not a "recreational" substance.

- [Sublingual/Chewed](#)

10-20 large leaves, or an equivalent quantity of extract.

Either fresh or dried leaves may be used. Dried leaves are reportedly less bitter; they must be rehydrated by soaking in water.

A quid is rolled and held in the mouth for about half an hour. The effects manifest much more gradually and last longer, about half an hour.

There are also other preparations, such as ethanol-based extracts or honey slurry.

Isolated Chemicals:

- [Salvinorin-A](#)

- [Salvinorin-B](#) Has been found not to be psychoactive

Documents:

- [Salvinorin A: Notes of Caution](#)
by Daniel J. Siebert. From "The Entheogen Review" Vol. 3, No.4: Winter Solstice, 1994.
- [The Secret of Smoked Salvia Divinorum](#)
by Michael S. Smith
- [How to propagate and grow Salvia divinorum](#)
- [Salvia divinorum Cultivation The Easy Way](#) by Dan McDonley
An easy approach to S. divinorum cultivation
- [The Secret of Smoked Salvia divinorum by Michael S Smith](#)
Getting the best results from smoked Salvia leaf
- [Salvia Divinorum: The Divine Mint](#)
Usage, effects, and cultivation of S. divinorum by scott@entheogen.com
- [Salvia Divinorum - A New Psychotropic Drug From the Mint Family](#) by Gordon Wasson
One of the first publications on Salvia divinorum
- [Salvia divinorum - Herb of Mary, the Shepherdess](#)
Focuses mostly on ethnobotanical information - from Ethnobotanical Leaflets
- [Ethnopharmacology of Ska María Pastora](#)
Ethnopharmacology of Ska María Pastora from the Journal of Ethnopharmacology 7

[more...](#)

Contacts and URLs:

- **Alkemists Pharmaceuticals** ([homepage](#), [more info](#))
"An independent contract laboratory dedicated to: Natural Product Consulting, Quality Control, Research & Development Manufacturing"
 - [HPTLC profile of Salvia divinorum leaf](#)
Compares the chemical constituents of two different clones. ([related items...](#))
 - [Interactive Salvia Divinorum](#)



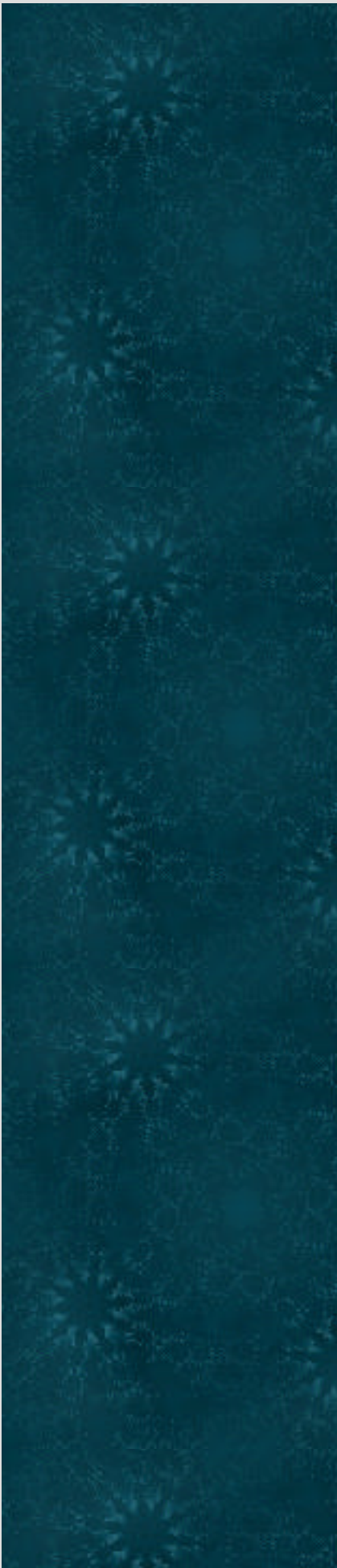
micrographs of the leaf at various magnifications ([related items...](#))

- **Cielo Ethnobotanicals** ([homepage](#), [more info](#))
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- **Erowid** ([homepage](#), [more info](#))
"Documenting the Complex Relationship between Humans and Psychoactives"
 - [Drug Testing Homepage](#)
Drug testing info for a wide variety of substances ([related items...](#))
 - [Salvia Vault](#) ([related items...](#))
- **Salvia divinorum Research and Information Center** ([homepage](#), [more info](#))
The authoritative Salvia site, maintained by salvinorin pioneer Daniel Siebert.
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- **Xenopharmacophilia** ([homepage](#), [more info](#))
 - [The Necessary Entheogen Explorer Files](#) ([related items...](#))
- **Miscellaneous URLs**
 - [Salvinorin: The Psychedelic Essence of Salvia Divinorum](#)
One of the first great resources for this mysterious plant ([related items...](#))
 - [The Botany of Salvia divinorum \(Labiatae\)](#)
SIDA (1993) 15: 349-366, HTML Version ([related items...](#))

[more...](#)

Images:

- [Salvia divinorum](#)
Several plants
- [Salvia divinorum Specimen](#)
Color photograph of potted plant showing good detail of leaf structure.
- [Salvia divinorum Specimen](#)
Color photograph showing side view of plant.
- [Salvia divinorum Specimen](#)



Cuttings taken from mother plants at Loogjee's greenhouse, rooted in water, and transplanted when the roots were 1/4 inch long. This plant was "hardened" to southern California weather conditions; it was given 5 hours indirect sunlight and 3 hours direct

- [Salvia divinorum Specimen](#)

Color photograph of 3' potted plant. Grown 4 months indoors from 5" cutting, then 3 months outdoors. Top view.

- [Salvia divinorum Specimen](#)

Color photograph of ~3' potted plants. Grown 4 months indoors from 5" cuttings, then 3 months outdoors. Side view.

- [Salvia divinorum Specimen](#)

Cuttings taken from mother plants at Loogjee's greenhouse, rooted in water, and transplanted when the roots were 1/4 inch long. This plant was "hardened" to southern California weather conditions; it was given 5 hours indirect sunlight and 3 hours direct

- [Salvia divinorum Specimen](#)

Color photograph of "pinched" plant.

- [Salvia divinorum Specimen](#)

Newly rooted cutting.

- [Salvia divinorum Specimen](#)

Color photograph of potted plant from above.

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Trip Reports:

- [A psychonaut walks into a bar](#): an experience one Saturday night.

Substances: [2C-B](#), [Marijuana](#), [Salvia divinorum](#)

- [This is Not a Cool Drug](#): Salvia, first time

Substances: [Salvia divinorum](#)

- [Astonishing!](#): A successful trip

Substances: [Salvia divinorum](#)

- [Smells like rubbing alcohol](#): Fear and Loathing-raised curiosity

Substances: [Ether](#), [Marijuana](#), [Salvia divinorum](#)

- [Beyond the Green Door](#): Cannabis and Salvia marathon

Substances: [Marijuana](#), [Salvia divinorum](#)

- [I Like This Stuff!](#): A well-written visionary experience

Substances: [Salvia divinorum](#)

- [Salvia.. ugh](#): Off the scale on the Weird-Shit-O-Meter



Substances: [Salvia divinorum](#)

- [Entrancing, Really](#): A well-written report

Substances: [Salvia divinorum](#)

- [Accordion Universe](#): Some strange distortions..

Substances: [Salvia divinorum](#)

- [DMT in Waterpipe](#): A novel technique

Substances: [DMT](#), [Salvia divinorum](#)

[more...](#)

Children:

- [Salvia divinorum, "Palatable" strain](#)

Descendents of specimen collected by Bret Blosser in 1991. Supposedly less bitter tasting than the Wasson & Hofmann clone

- [Salvia divinorum, Wasson & Hofmann clone strain](#)

Descendents of the specimen collected by R. Gordon Wasson and Albert Hofmann in 1962

Created 3/22/2000 18:55:28

Modified 9/20/2000 20:20:21

Leda version 1.4.3

Trip Reports

Salvia and Coleus spp.

"Salvinorin A is the primary psychoactive component of *Salvia divinorum*, a member of the sage family found in the Mexican state of Oaxaca. Salvinorin A is the most potent naturally occurring psychedelic known, and in many ways the most enigmatic. Those using salvinorin A find it frequently induces experiences of an intensity level which is an order of magnitude beyond those experienced with any other psychedelic, even DMT. The dimensions visited under the influence of salvinorin A are described as extremely bizarre and varied, with several aspects not common to other psychedelic experiences. "

-

, D.M. Turner

Salvia divinorum

- ... A unique combination.
- ... an experience one Saturday night..
- ... Ayahuasca and Salvia.
- ... A Poetic Account.
- ... Cannabis and Salvia marathon.
- ... A novel technique.
- ... Rue and Salvia.
- ... Combining LSD and Salvia.
- ... Some reflections...
- ... Some strange distortions...
- ... Salvia strangeness...
- ... Switching Lives.
- ... First time account.
- ... What does it all mean?.
- ... Yeah, that's Her.
- ... Rejected!.



- ... Salvia,
psilocybin, and 2C-B.
- ... A well-written
report.
- ... Mantis
encounter!.
- ... An
extract report.
- ... A well-written
visionary experience.
- ... A
waterpipe trip.
- ... Not everyone breaks
through...
- ... A report of
extraction action.
- ... More failures...
- ... A successful trip.
- ... Another impressive
success story.
- ... Good description of
phenomenology.
- ... Report of oral
administration of an extract.
- ... An amazing first
experience.
- ...
Salvia is sentient!.
- ... Salvia enhanced
with 2C-B.
- ... A labrynth of
pure Salvia strangeness.
- ... The Salvia Tribunal.
- ... A set of experiments.
- ...
Completely powerless while on
Salvia.
- ... Another
Salvia virgin.
- ... A Salvia breakthrough.
- ... A set of
experiments.
- ...
Wonderfully Strange.
- ... 5x proves its power
yet again.
- ... pulled magnetically
through the vortex.
- ... not for the faint of
heart.
- ... an
interesting venture.
- ... More strangeness from
the Salvia realm.
- ... the
combined wisdom of Salvia and
Ayahuasca.
- ... An explorer feels the
effects _before_ the material is
smoked..
- ... First-time
Salvia Strangeness.

- ... Salvia success.
- ... A multi-perspective report.
- ... That refreshing taste.
- ... Smoked extract.
- ... Cosmic piano, baseball.
- ... Grew out of my body!.
- ... Meeting with an old friend.
- ... Salvia, first time.
- ... Four experiences recounted.
- ... A novice reports.

Salvia splendens

- ... Introducing Salvia splendens.
- ... Another splendens account.

Salvia coccinea

- ... Another psychoactive Salvia?.

Coleus spp.

- ... better luck with a pipe.
- ... attached to the back of the author's head.
- ... Inner Conversations.
- ... Another unusual combination.
- ... Off the scale on the Weird-Shit-O-Meter.
- ... Fear and Loathing-raised curiosity.
- ... Childhood memories surface.
- ... "I started receiving this... message. A message from a coalition of entities".
- ... "I saw these entities marching in procession to the music".
- ... "I put the extract under my tongue...".



... A related plant.



... A Coleus
Quid.

Salvia superba



... What? MORE psychoactive Salvias?.

*Trip report software written by James Farrell, graphics
by Occupant*
Contact:

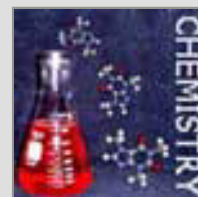
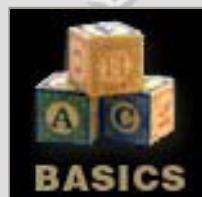
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Salvia Divinorum Vault

(Salvinorin A)



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[Salvia & Drug Tests](#) ☼

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[D.M. Turner's Salvinorin \[Online Text\]](#) ☼

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[Isopropanol or Reagent Grade Acetone](#) ☼

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[A New Mexican Psychotropic Drug from the Mint Family](#) 

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[Cultivating Diviner's Sage, by Will Beifuss](#) 

[Hydroponic Cultivation of Salvia Divinorum](#) 

[Harvesting Salvia Divinorum](#) 

EXPERIENCES

[A Breakthrough into the Raging Space of History, by Abrupt](#) 

[Switching Realities with Salvia, Anonymous](#) 

[A Total Mind/Body Trip, by Myke \(extract\)](#) 

[Visiting Other Dimensions, Anonymous](#) 

[Use a Sitter!, by Andy Weisner](#) 

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BIBLIOGRAPHY

[Salvinorin : The Psychedelic Essence of Salvia Divinorum, by D.M. Turner](#) 

[The Salvia Divinorum Growers Guide](#)

OFF-SITE SALVIA RESOURCES

PRIMARY RESOURCES

[Salvia Divinorum Research and Information Center](#)

[Lycaeum : Salvia](#)

SECONDARY RESOURCES

[Growing Salvia divinorum](#)

[All about Salvia Divinorum](#)

[The Botany of Salvia Divinorum](#)

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FOREIGN LANGUAGE RESOURCES

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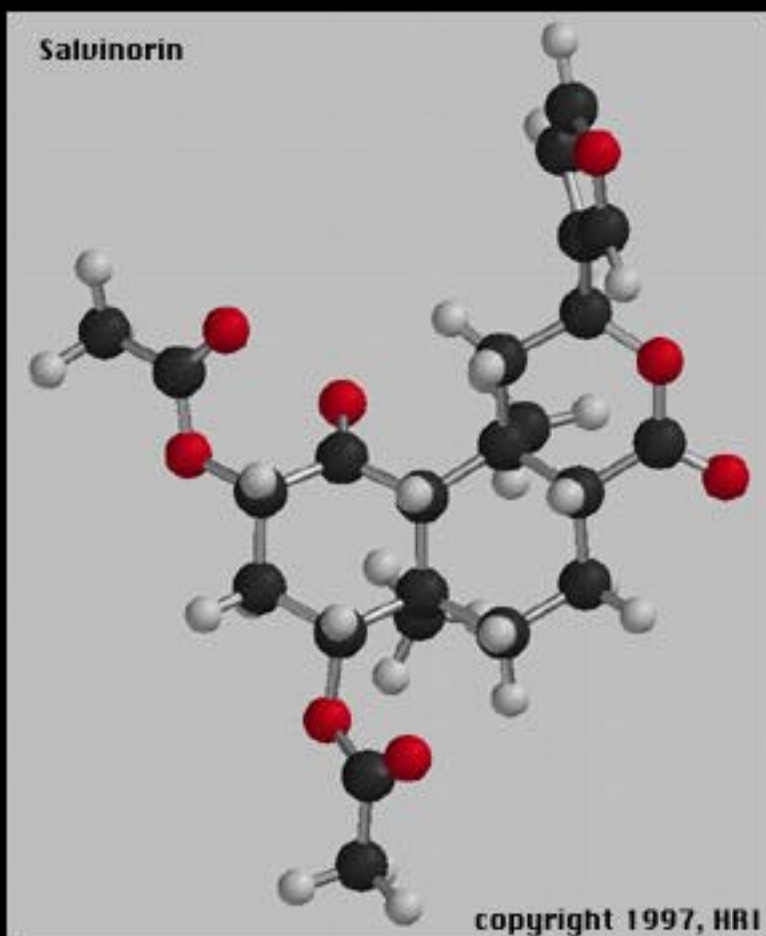
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Salvinorin



This is a framework representation of a molecule of Salvinorin A, the psychoactive component of *Salvia divinorum*. The molecule was minimized using molecular mechanics routines, as implemented within the Spartan software package (v. 4, Wavefunction, Inc) and running on a Silicon Graphics Indigo 2 workstation. This compound, which anecdotal accounts suggest is extremely potent when administered parenterally, has an unknown mechanism of action, one that clearly differs from the classical hallucinogenic agents such as LSD or mescaline. As suggested by the large number of carbon atoms in this structure, the molecule is very lipid soluble. Curiously, salvinorin A also lacks a basic nitrogen atom, a feature that is quite uncommon among psychoactive compounds. Tetrahydrocannabinol is the only other well known psychoactive substance that lacks a basic nitrogen, but there is no evidence that these two molecules share a similar mechanism of action.

[Return to Graphics Index](#)

Taxon: *Salvia divinorum* Epling & Játiva

Genus: [Salvia](#)

Family: [Lamiaceae](#) alt. Labiatae.

Nomen number: 400324.

Place of publication: Bot. Mus. Leaflet. 20:75. 1962.

Name verified on: 06-Oct-1994 by Systematic Botany Laboratory.

No species priority site assigned.

NO ACCESSIONS IN NPGS UNDER THIS NAME.

Common names:

- herb-of-the-virgin (Source: [Dict Rehm](#))
- hierba de María (Source: [Dict Rehm](#)) [Spanish]
- hoja de la pastora (Source: [Dict Rehm](#)) [Spanish]

Economic importance:

- Social: hallucinogen (fide Dict Econ Pl)

Distributional range:

Native:

- Northern America: Mexico - Oaxaca

References:

- J. C. T. Uphof. 1968. Dictionary of economic plants, ed. 2. (Dict Econ Pl)
- A. S. Reisfield. 1993. [Sida](#) 15:349-366.
- J. H. Wiersema & B. León. 1999. [World economic plants: a standard reference. \(World Econ Pl\)](#)

Check other databases for *Salvia divinorum*:

- [W³TROPICOS](#): Nomenclatural and Specimen Database of the Missouri Botanical Garden

| [USDA](#) | [ARS](#) | [GRIN](#) | [NPGS](#) | [New Search](#) |

Cite as: USDA, ARS, National Genetic Resources Program. *Germplasm Resources Information Network - (GRIN)*. [Online Database] National Germplasm Resources Laboratory, Beltsville, Maryland. Available: http://www.ars-grin.gov/cgi-bin/npgs/html/tax_search.pl?Salvia+divinorum (04 September 2001)

Send your comments to: [Dr. J. H. Wiersema](#).

Return to the [Taxonomy Home Page](#).



Lagochilus inebrans





Salvia splendens. A psychoactive sage?

The *Salvia divinorum* Research and Information Center

is created and maintained by

Daniel Siebert



Salvia splendens is one of the most commonly grown ornamental *Salvia* species. It is cultivated as a bedding plant in many countries. Most nurseries carry dwarf varieties in various colors including scarlet, purple, orange, lavender and yellow.

There are many compounds in nature that are similar to the salvinorins in structure. In Alfredo Ortega's 1982 paper: [Salvinorin, A New trans-Neoclerodane Diterpene from *Salvia divinorum* \(Labiatae\)](#), he mentions that "Except for differences in the substituents and stereochemistry at C-8 and C-12, salvinorin is structurally similar to salviarin and splendidin, compounds which were recently isolated from *S. splendens* ...".

Having read Ortega's paper during the course of my research on *Salvia divinorum*, in 1993 I tried smoking some leaves of *Salvia splendens* to see if perhaps this species had any psychoactive properties similar to *S. divinorum*. I did not notice any significant effect. Then in 1997 two members of the now defunct *Salvia email list*, Kevin Brunelle and Claude Rifat, posted reports to the list stating that their self-experiments with *S. splendens* showed that this herb produces psychoactive effects when the leaves are smoked or chewed to allow for sublingual absorption. They described it as producing pronounced relaxation and a sense of detachment and claimed that the effects could be obtained using just a few leaves. Upon hearing their reports, I decided it was worth another look. My next attempt at smoking the leaves did in fact produce a very noticeable and unambiguous sense of relaxation. I subsequently made several additional attempts to obtain effects from this herb, using both smoked leaves and an extract, but have not since been able to obtain any discernable effects.

I have now heard from many people who have tried *S. splendens*, and their reports vary. About half of the people claim that they feel noticeably relaxed after ingesting it, and half report no effects. It is possible that the "active" compound(s) in the herb are variable or that people's sensitivity varies. It is also possible that the herb is pharmacologically inert and all of the positive reports, including my own, are due to placebo effect. In order to determine whether or not *S. splendens* is truly psychoactive, I conducted a double-blind experiment. The study is complete and the results are reported in an interview that I gave for the *Entheogen Review*. See: [Daniel Siebert Speaks...](#) *The Entheogen Review*. 1999 V. 8, No. 3. Interviewed by Will Beifuss.

Photographs of *S. splendens*

 [Bicolored Salvia splendens cv. "Salsa".](#)

 [Scarlet Salvia splendens](#)

Salvia splendens is native to the Brazilian rain forests, where the wild form grows to about 150cm. By selection 20-30cm high variants were developed, of these `Johannisfeuer', which in English is called 'St. Johns Fire', grows to 35cm, even smaller is `Scarlet Piccolo' in which even very young plants flower. The species is easy to grow from seeds or cuttings. This species prefers full sun.

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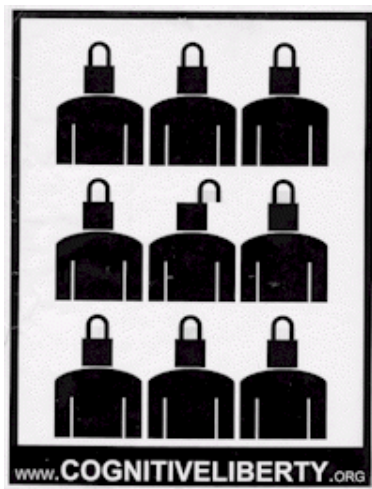
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Sept. 4, 2001

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The Alchemind Society is an international nonprofit association of people working in the public interest to protect the fundamental right to freedom of the mind.

We celebrate, foster, and protect **cognitive liberty**: the right of each individual to think independently, to use the full spectrum of his or her mind, and to engage in multiple modes of thought and alternative states of consciousness.

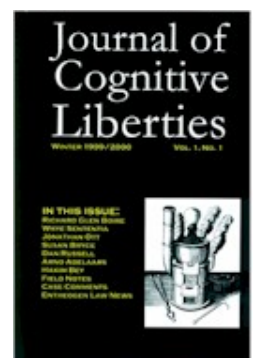


We encourage social policies that protect cognitive autonomy, the right of each individual to remain free from compelled or surreptitious manipulations of consciousness by outside forces.

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Our work is multifaceted. The Alchemind Society:

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- ◆ **Publishes** [the Journal of Cognitive Liberties](#),
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The freedom to control one's own consciousness is the essential foundation of all other freedoms. If you believe in the basic right to cognitive liberty and autonomy, [please join us!](#)

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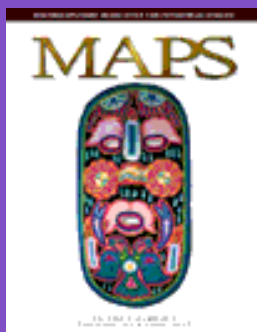
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THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Abstract



Salvia divinorum, ceremoniously employed by the Mazatec Indians of Oaxaca, is endemic to the sierra inhabited by the Mazatec, its distribution anthropogenic. Plants spread vegetatively, flourishing in shaded, humid sites, flowering sporadically from October until June. Flower nectar and corolla dimensions suggest ornithophily, and the only pollination event observed involved a single hummingbird, but other factors suggest that visits by birds to the flowers in their present range are

opportunistic, and not a product of plant-pollinator coevolution. The species is diploid with $n=11$, pollen fertility is reduced, there is no active pollen tube inhibition within the style, but some event or process after the pollen tube reaches the ovary is aberrant, as no fully developed nutlet has ever been collected from a Mexican plant, and greenhouse cross-pollinations led to only 3% seed set. Hybridity is suggested, although intermediacy between two known species has not been recognized.

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Introduction

Of the almost 1000 species of *Salvia* in the world, none has fired the imagination as much as *Salvia divinorum* Epling & Jativa-M, the enigmatic species ceremoniously employed by the Mazatec Indians of Oaxaca, Mexico. The western world first learned of this salvia, or sage, in 1962, when Epling and Jativa-M described the entity from specimens given to them by Albert Hofmann and Gordon Wasson (Wasson 1962; Hofmann 1980), naming it *S. divinorum*



after its reported use in divination and curing by the Mazatec. Hofmann, the chemist famous for discovering LSD and isolating psilocybin and lysergic acid amides from the mushrooms and morning glories used by the Mazatecs, had explored the Sierra Mazateca that year with Wasson, the self-styled ethnomycologist who pioneered the investigations into the Mazatec rituals. The two criss-crossed the rugged highlands on horseback searching for *S. divinorum* in the wild, but never were able to locate it. The flowering branches that eventually reached Epling were brought to Hofmann and Wasson by Indians in the village of San Jose Tenango, though no one was willing to take them to a living plant. Wasson (1962), therefore, concluded that *S. divinorum* is a cultigen that may not exist in the wild state.

Because of the aura of secrecy surrounding *S. divinorum*, the scientific community has not known of this species until recently. A

botanist making general collections is not likely to collect *S. divinorum* because its distribution is highly restricted and its flowering infrequent, thus the few existing collections of this species have all been made in conjunction with ethnological investigations.



Several aspects concerning this species beg inspection: it has been found growing only in the region inhabited by the Mazatec Indians; no plants have ever been observed to set seed in the wild; and though plants may be found

flowering at any time from October until May, they apparently rarely do so. The corolla conformation suggests no clear pollination syndrome and the flowers do not point to any obvious taxonomic affinities within *Salvia*. These and other questions regarding the biological status of *S. divinorum* cannot be fully understood without consideration of the magico-divinatory aspects of the species. Although information regarding the Mazatecs is limited, recent interest in these people and their medico-religious approach to healing has shed light on certain facts that may be relevant to the natural history of the species, as the pertinent writings of Wasson and Valdes have elucidated (Wasson 1962, 1963, 1980; Wasson et al. 1974; Wasson & Wasson 1957; Valdes 1983; Valdes et al. 1983; Valdes et al. 1987).

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

The Mazatec Landscape



The Mazatec Indians have lived in a relatively isolated area in northernmost Oaxaca, wedged in between the states of Puebla and Veracruz, since well before the arrival of the Spanish in the Sixteenth Century (Fig. 1). The

topography of the region is diverse, characterized by rugged highland areas virtually without level ground. The dissection of the terrain is reflected by the many dialects of the Mazatecan language spoken, and the unique "language silbado," or whistle language, by which the Mazatecs can carry on a conversation with whistle sounds only. Like the yodeling of the Alpine shepherds, communication from one peak to another is made easier using a vocabulary of sounds especially tailored for that purpose. The temperate highlands of the Sierra Mazateca, roughly 1200-2500 m in elevation, grade into tropical lowlands, which comprise somewhere near 40 percent of the total area inhabited by the Mazatec (McMahon 1973; Vasquez 1981). South and east of the highland region, these areas are part of the extensive Papaloapan river basin. About half of the roughly 1000 km² of lowland terrain once inhabited by the Mazatec was inundated with water in 1955 to form the Miguel Aleman Dam. This huge hydro-electric project forced over 20,000 Mazatecs to abandon their homes, and many of those displaced now live on the banks of the dam, including its eastern shores (where *S. divinorum* does not grow, see below).





FIG. 1: Stippled region represents the area inhabited by the Mazatec. Note that the Aleman Dam, created with the waters from the Tonto River, is not shown. (Map Taken from Weitlaner & Hoppe 1969.)

The climates of highland and lowland Mazatec country are quite unlike each other. At an elevation of 1700 m, the large and central community of Huautla de Jimenez is cool and wet. Relief from the



unrelenting fog comes only during the short dry season between late March and early May, though the fog is often replaced by torrential downpours in the summer. The annual precipitation ranges from 256 cm to over 400 cm in very wet years, and the

average annual temperature is 61°F. To the east, at an elevation of 733 m, the village of Ayautla receives a similar amount of precipitation annually, but is warmer, with an average temperature of 68°. Still farther east is San Pedro Ixcatlan, on a peninsula surrounded by the waters of Aleman Dam, and the adjacent low-lying "tierra caliente" on the eastern side of the lake. These areas also receive a similar yearly amount of rainfall, but they are still warmer, with annual average temperatures of over 78° (Garcia 1973; Vasquez 1981). The low-lying areas which surround the dam are much more uniform in temperature and moisture regime than the dissected highlands, and therefore are more easily characterized. The rainy seasons (June-August; September-October) and dry seasons (August, in part; March-May) are less variable than in the highlands, where different faces of a mountain may have widely different microclimates.



THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Previous Research

In 1963, Carl Epling placed cuttings of Hofmann and Wasson's original type collection of *S. divinorum* in the University of California, Los Angeles (UCLA) Botanical Gardens. Epling never saw these plants flower in the gardens at UCLA, and mistakenly described them as having blue corollas. The source of this error is made apparent by Hofmann (1980), who recalls the time he and Wasson received the plant material:



"From an old Curandera, a venerable woman in a strikingly magnificent Mazatec garment, with the lovely name Natividad Rosa, we received a whole bundle of flowering specimens of the sought-after plant,... [she would not] tell us where she had gathered the leaves. They grew in a

very, very distant forest valley. Wherever she dug up the plant, she put a coffee bean in the earth as thanks to the gods... We now possessed ample plants with flowers and roots, which were suitable for botanical identification... The plants had blue flowers crowned with a white dome..."

In fact, the white dome referred to by Hofmann was the corolla, which, in the specimen described, had apparently not yet opened. Likewise, the illustration of *S. divinorum* in Schultes and Hofmann (1980) includes only flowers in bud, and the artist's rendition of the individual flower parts emphasizes the mistake: the stamen, style, and corolla are each drawn as they appear before the flower opens. Hofmann and Wasson, neither of whom had any idea what the flowers of this *Salvia* look like, did not realize what they described as "blue flowers, crowned with a white dome" were actually blue calyces with

unopened white corollas. The mistake survived in Epling and J tiva's (1962) original description of the species because they never themselves saw living flowers, and the white corollas turn brown upon drying. Diaz (1975), Emboden (1979), Valdes (1983), and Valdes et al. (1987) have all correctly reported that the corollas of *S. divinorum* are pure white, while the calyx and flowering stem are violet blue.

In the course of his pharmacological research, L.J. Valdes (1983) and Valdes et al. (1987) performed several experiments designed to help answer questions regarding the reproductive biology of *S. divinorum*. Of the 14 flowers he cross-pollinated by hand, four set seed, though the number of nutlets that reached maturity is unclear (the ovary of each flower consists of four mericarps). Valdes concluded that the species is self-sterile, though apparently no attempt was made to self-pollinate any flowers. Daylength experiments, carried out in order to explain the blooming requirements of *S. divinorum*, suggested that it is an obligate short-day plant, with plant height a minor factor in flower initiation. Still, the sporadic flowering of wild populations, the conditions that promote flower initiation, and the failure of the flowers to lead to fruit formation are aspects which remained unclear. These and other questions regarding coevolved pollinators and biological status are addressed below. Investigations of the author (Reisfield 1987) described here have involved visiting and collecting material from many populations in the field, a "stakeout" at a flowering population to observe pollinators, chromosome number determination, greenhouse flower induction experiments, artificial self- and cross-pollinations, pollen stainability studies, fluorescence microscopy of pollen tube growth through styles, and nectar analyses.

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Materials and Methods



Fieldwork carried out during the winter of 1983-84 consisted mainly of searching the Sierra Mazateca for populations of *S. divinorum*. Flowering populations near Cerro Quemado, a village on the western side of the Aleman Dam, were visited in October, 1985, and watched for two days and one night in order to note any visitors to the flowers. Plants were observed during the night by periodical inspection using a red-filtered incandescent lamp. After being visited, flowers were inspected to see

whether pollen had been deposited on the stigma, and whether the store of nectar had been depleted.

Plants of *S. divinorum* from several sources were propagated at the University of Wisconsin-Madison Botany Department (UW) Greenhouses. Valdes generously provided potted plants derived from three sources: a collection from Cerro Rabon, near the Mazatec village of Ayautla, a collection from near the village of Cerro Quemado, and clonotypic material obtained from Berkeley. Later, plants I collected near Cerro Quemado (*Reisfield & Solheim 1102*) and Ayautla (*Reisfield & Solheim 1102*) were added to the living collections.

Valdes learned from Robert Ornduff (pers. com.) that plants grown in the gardens at both UC Berkeley and UCLA formed flower buds that subsequently reverted to vegetative growth. (This, in fact, also occurred on plants growing in the UW greenhouses during the winter of 1986-87). Apparently, a limited exposure to light during the night will upset the hormonal mechanism by which the plant perceives a decrease in daylength. Thus, beginning in late October, 1984, a subset of plants at the UW greenhouses were subjected to artificially shortened days of 8-10 hours by covering them with a black cloth each afternoon.

Flowers were hand-pollinated by removing the stamens and

immediately brushing the dehiscing anthers against the inner surfaces of both stigma branches until pollen grains adhered to the stigma. Self-pollinations were performed within individual flowers, between flowers of the same plant, and between plants derived from a common source, while cross-pollinations were performed between plants derived from different sources. Pollinations were performed at different times during the day (and night), and between flowers of different ages.

To study pollen germination and pollen tube growth, styles were collected from flowers that had been self- or cross-pollinated between 4 and 18 hrs earlier. The styles were fixed in FAA and stored in distilled water at approximately 5°C. They were cleared with 8N sodium hydroxide for 24 hrs, then taken through several washes with distilled water, and stained with aniline blue at a concentration of .01 percent for 4 hrs. Fluorescence microscopy was performed with a Zeiss microscope equipped with a Zeiss UG1 excitation filter and 47,-65 barrier filters. The UV source was an Osram HBO 200W mercury vapor lamp. Staining and microscopy techniques mostly followed Martin (1959) as modified by Stettler and Guries (1976). Styles were slightly crushed beneath a coverslip and observed whole in a darkened room. The callosic lining of the pollen tubes fluoresces a bright yellow-green, but the amount and distribution of callose varies between taxa (Martin 1959). Scanning several unrelated species of *Salvia* showed that pollen tubes come in and out of visibility over the length of the style, and can easily be distinguished from the two vascular bundles which fluoresce a uniform, much less brilliant yellow. Since fluorescence was most visible at the stigmatic and ovary ends of the style, an inability of the tubes to reach the ovary should have been readily detectable.

Pollen grains from FAA-preserved flowers on wild and greenhouse-grown plants were analyzed for cytoplasm stainability. Sterile or aborted pollen grains did not take up the cotton blue-lactophenol stain, and were also conspicuous by their shrunken size and shriveled form.

Nectar studies included an analysis of constituents, a study of daily secretion patterns, and also total volumes produced per flower. Calibrated micropipettes were inserted into the pool of nectar that accumulates at the base of the corolla tube, with nectar extracted by capillary action. Sugar concentrations were measured with an Extech model 2132 pocket refractometer, with several nectar samples also analyzed for sugar constituents (ratio) by Irene Baker at UC Berkeley.

The nectar was spotted on Whatman #2 filter paper, the diameter of the spot outlined with four pencil marks, and the volume and percent sugar for each spot provided to Dr. Baker.

Young anther sacs were dissected and meiocytes squashed according to the technique of Beeks (1955). These were viewed with a Zeiss phase-contrast microscope.

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Distribution, Ecology, & Flower Initiation

During the winter of 1984-85, approximately 15 populations of *S. divinorum* were located, though for the purpose of mapping their distribution, several populations are merged because of their proximity.



Distribution of *Salvia divinorum* Epl. & Jat. Arrows point to populations found during fieldwork in the winter 1984-85. In addition to the locations shown, the type specimen was collected in (near?) San Jose Tenango. Miguel Aleman Dam refers to the lake. (Adapted from McMahon 1973.)

Salvia divinorum was first located (Reisfield & Solheim 1177) about 2 km north of the village of Huautla de Jimenez in a very wet, somewhat disturbed, shaded ravine at the edge of a coffee plantation. The coffee plantation apparently replaced a cloud forest, the remnants of which included *Liquidambar macrophylla* Oerst. and *Hedyosmum mexicanum* Cordem. Plants of *S. divinorum* were found growing along a streambank, with some stems trailing near or in water, rooting copiously at the nodes and sometimes along internodes. Broken, trailing, and drooping stems were noticed to resume erect growth at the stem apex or by axillary branching, with new, vigorous shoots often arising from the axils of old, senescent stems.



All living stems were observed to arise from stems that had since died, the dead stems lying on or in the ground, sometimes appearing as woody caudices. Many stems were cut, apparently by people who collected the leaves for medico-religious use. Several old, dried, inflorescence branches (rachises) were present but no fruit were found. Later, similar populations (Reisfield & Solheim 1090, 1092) were found in other ravines near Huautla.



The road from Huautla (1700 m) to Ayautla (760 m) is copiously criss-crossed by streams and wet ravines that were searched for populations of *S. divinorum*. A few such populations (Reisfield & Solheim 1111-12) were finally found near Ayautla, and these again showed signs of past flowering, but all the old floral stems were entirely naked (in *Salvia*, the developing fruit are enclosed by a persistent calyx, but failure of the nutlets to develop normally

leads to calyx abscission). The plants were spreading vigorously along the rocky streambanks, and erect shoots emerged mostly from a thick litter composed of older decaying stems. One branch was completely severed, lying in shallow water and rooting along the internodes. An additional population in this area, chosen by a local shaman, Maria de la Oz Unda, to supply the leaves for the divinatory ceremony we had requested, grew among the trees of a coffee plantation. Although there was no running water at this site, the

many epiphytic ferns and orchids suggested that this wooded mountain slope is regularly blanketed in fog. Similar stands of *S. divinorum* in "cafetals" were found near Huautla (Reisfield & Solheim 1090) and Cerro Quemado (Reisfield & Solheim 1108).

Flowering of *S. divinorum*, as in many forest understory species, is promoted by sunlight, and the extent of flowering of a given population is dictated by the amount of sunlight that penetrates the canopy. We saw our first flowering population of *S. divinorum* (Reisfield & Solheim 1093) near the village of Chilchotla (1200 m). The plants colonized the banks of a broad, shaded ravine with several pools of standing water. The channel of the ravine was mostly without vegetation and almost certainly flooded during wetter periods. The vegetation suggested a



transition between cloud forest (e.g., *Hedyosmum*, *Liquidambar*) and tropical evergreen forest (e.g., *Syngonium* and other Araceae), and climatic data (Garcia 1973) indicates that this area is extremely humid, with an annual average of 472 cm of rain. This flourishing population of plants appeared to be clonal, spreading vegetatively in the same fashion as populations observed previously. Inflorescence rachises past the flowering stage were again entirely naked, and not a single mature nutlet was found. The beautiful white and violet flowering stems, found only in patches where sunlight penetrated the canopy, were very conspicuous. This observation suggests the main distinction between this and previous sites where populations of *S. divinorum* were found. The breadth of this ravine allows a greater penetration of sunlight, while the extreme humidity of the region prevents even sunny

microhabitats from drying out. It is this interplay between sunlight and humidity that apparently dictates the success and the extent of flowering of a given local population of *S. divinorum*.

Another flowering population (*Reisfield & Solheim 1109*) was found on a steep face of Cerro Alto, the mountain adjacent to the village of Ayautla. This trailside population formed a thick, shaded stand, with crowded stems over 2 m tall. Flowering branches, up to 3 m tall, rose above the rest and received filtered or direct sunlight. Valdes (1983) reported he collected plants from Cerro Rabon, a somewhat more distant mountain, but our local guide, Pedro Diaz, insisted that he



knows "La Maria [*S. divinorum*] very well, and in 40 years of walking Cerro Rabon, [he] never saw it up there."

Several populations of *S. divinorum* (*Reisfield & Solheim 1102-03, 1106-08*) were found on the east-facing bluffs above the village of Cerro Quemado, on the western bank of the Aleman Dam. At roughly 300-400 m elevation, these stands were scattered along a steep trail that winds between the peaks of Cerro Quemado and Cerro Camaron. Some plants were found in a slash-and-burn cornfield, where most of the associated vegetation was disturbed, replacing a tropical evergreen forest with *Brosimum*, *Dendropanax*, and *Urera*. Many flowering stems were found, these always in partial to full sunlight, sometimes dried out to the degree that the leaves were badly wilted.



Climatic data for the nearby village of Ixcatlan (Garcia 1973) indicates

that this area is considerably warmer than the highland regions of the Sierra Mazateca, the wilting plants perhaps demonstrating that *S. divinorum* is here at its limit of evapo-transpiration tolerance. On the other hand, these same populations included more flowering stems than any other, again indicating that flowering of *S. divinorum* is promoted by sunlight, and perhaps the stress of drying out to a certain degree. This is reasonable in light of the heliotrophic nature of *Salvia* in general, with mostly species of open ground and with brightly colored flowers. *Salvia divinorum*, though, with its crisp, watery, easily broken, hollow stems, is clearly a hydrophyte, and most aggressively colonizes sites that are dark and humid. Vigorous, flowering populations are



found in conditions of marginal light, and in very humid areas (e.g., Chilchotla), the plants can "venture out of the shade" into the sunlight where they will flower.

Conditions that promote vegetative growth of *S. divinorum* are different than those that promote flowering, and this is reflected in the character and distribution of populations. The Mazatecs displaced by the Aleman Dam, who now live in the low-lying "tierra caliente" on the eastern side of the dam, have

tried, unsuccessfully, to cultivate *S. divinorum* (Diaz, pers. com.). This region receives similar amounts of rainfall as the highland areas of the Sierra Mazateca, but is warmer, and consequently drier. Thus, in order to gather fresh leaves, some of these Indians travel by boat across the lake to the hillsides near Cerro Quemado, where the populations are at their limit of evapo-transpiration. Throughout the higher, cooler regions inhabited by the Mazatec, flourishing populations may be found in shaded ravines near water, or on mountainsides continuously bathed in fog. In the latter type of site, often a hillside planted to coffee, *S. divinorum* is almost certainly introduced, and the Mazatecs do this by simply sticking a severed branch into the soil. Though the more remote, aggressive populations along watercourses seem not to have been planted, they may in fact have been introduced long ago. The Mazatecs do not distinguish between wild and cultivated populations, nor do they

attach any significance to the flowers.

While Emboden (1979) reported that *S. divinorum* flowers only when the "branches" [stems] are seven feet or more in length, Valde's et al. (1987) concluded that plant height is a minor factor in flower initiation. In the Sierra Mazateca, most flowering stems are, in fact, very long, since the stems that elongate the most are most likely to receive direct sunlight. Plants grown in the University of Wisconsin Greenhouses received unfiltered sunlight, and those which were subjected to the short-day treatment flowered profusely on branches of varying lengths.



Flower buds on greenhouse-grown plants were first noted roughly 2 months after the beginning of the short day treatment, and the first flowers did not open until almost one month later. The nearly 3 month lag between the time the plants first perceived the stimulus to flower and the onset of flowering correlates with the results of Valdes et al. (1987), but raises the question of whether any critical threshold period is really perceived by the plants. The type specimen was collected in flower by Hofmann and Wasson on October 8 (I am unaware of the collection flowering in August, referred to by Valde's), which suggests that these plants perceived the stimulus to flower more than 3 months earlier, that is, in late June, during the period with the longest days of the year. The mechanism responsible for flower induction is apparently not as simple as our greenhouse and growth chamber experiments would suggest, and the actual induction of flower primordia probably involves several factors, including temperature and water regimes.

Perhaps the critical stimulus perceived by the plant is an increase in the length of the night *per se*, an hypothesis that could easily be tested. Flowering plants have been collected from near Cerro Quemado in March, and local villagers insisted *S. divinorum* flowers most abundantly in March, April, and May, when it is the driest. In light of the conditions that promote flowering during the cool and wet winter, these assertions seem more than reasonable.

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Co-Evolved Pollinators



Although several flowering populations were finally found during the winter of 1983-84, at no time was a legitimate pollinator observed visiting flowers. While poor flight conditions for Hymenoptera often prevailed, pollinators were also conspicuously absent during

an entire, sunny, hot afternoon while flowers were collected near Cerro Quemado. Bumblebees were active in the area, but they ignored the white and violet inflorescences of *S. divinorum* as they do scarlet flowers of many ornithophilous salvias. The explanation for this behavior is suggested by the dimensions of the *S. divinorum* corolla, which more resembles those of ornithophilous *Salvias* than melittophilous ones (Fig. 3). The sigmoid corolla tube is 19-22 mm long, and measures only 2 by 1.5 mm at its narrowest point, near the throat. The lower lip, which is horizontally expanded to form a landing platform on bee flowers, is instead vertically oriented, with the middle lobe somewhat cupped, like those of classical hummingbird pollinated *Salvias*. The sigmoid curvature of the corolla tube is uncommon in bee flowers, but characterizes several bird pollinated species of *Salvia*, such as those in sect. *Flexuosae* Epling.

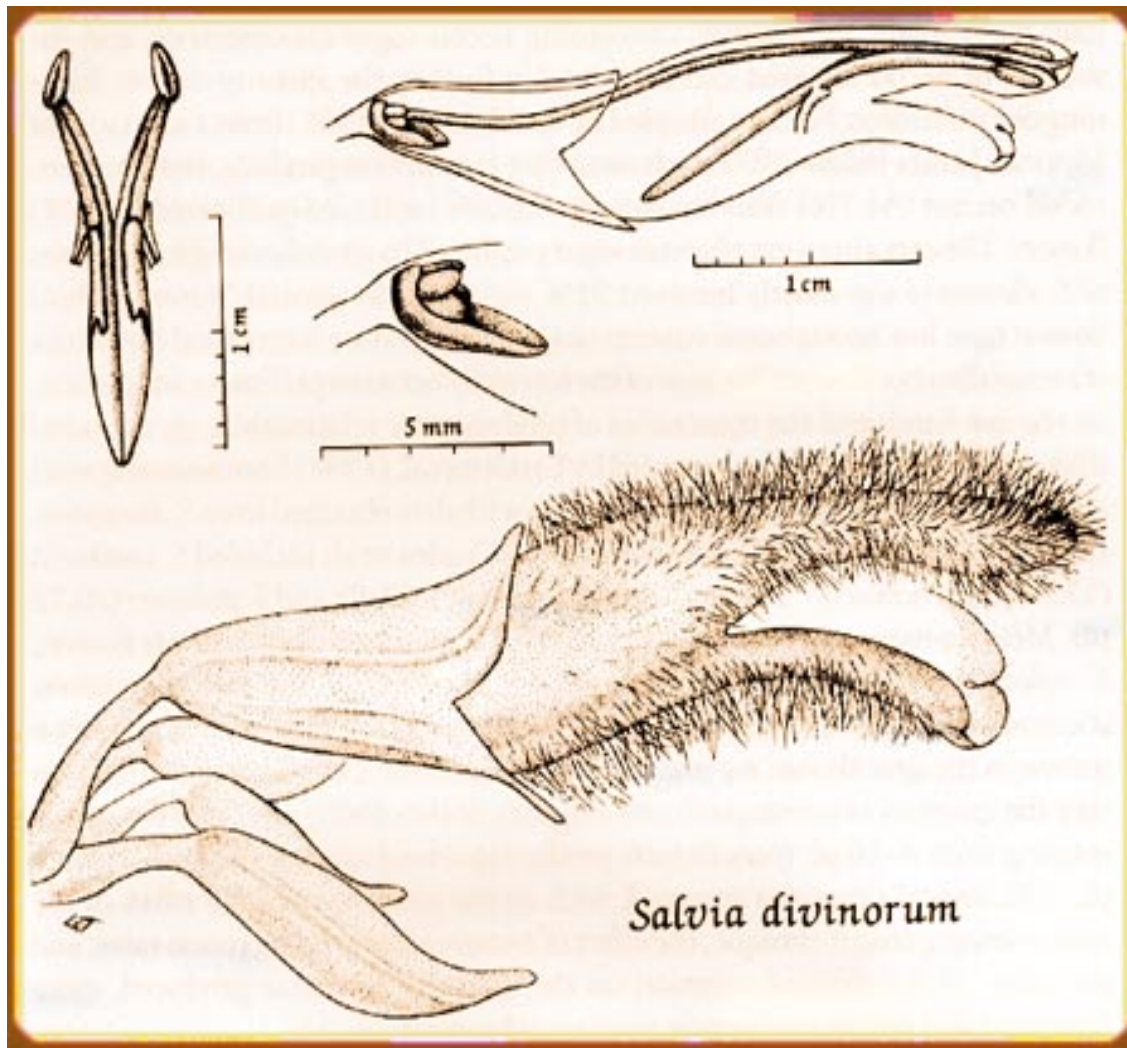


FIG. 3: a. Flower of *Salvia divinorum*; b. Diagrammatic illustration of flower with contained androecium and pistil; c. Stamen connectives; d. Ovary and gynobase. (Illustration by Lucy Taylor)

Data obtained from analyzing nectar constituents are consistent with ornithophily. As might be expected, the nectar sugar is sucrose dominant, as are most nectars from flowers pollinated by long-tongued bees, hawkmoths, or birds. Flowers from clonotypic plants yielded a nectar sugar composed of 86% sucrose, 10% fructose, and 4% glucose. This evidence is even less meaningful in light of the fact that the Labiatae, as a group, are characterized by sucrose-rich or sucrose-dominant nectar sugars (Baker & Baker 1983).

While the corolla tube of *S. divinorum* suggests a co-evolved pollinator with long mouthparts, information concerning nectar sugar concentration and the volume of nectar secreted can help resolve further the identity of this long-tongued pollinator. Nectars sampled by Cruden et al. (1981) from a spectrum of Mexican plants below 2400 m showed that bee flowers produce more concentrated nectars (34.7%) than hawkmoth- (22.6%) and

bird-pollinated (23.8%) flowers. The concentration of nectar sugar produced by greenhouse-grown plants of *S. divinorum* was mostly between 21% and 23%. In general, hummingbird flowers have low nectar-sugar concentrations, but produce larger total quantities of nectar than bee flowers. Because of the interplay between pollinator adaptation, on the one hand, and the constraints of phylogenetic relationship, on the other (Baker & Baker 1983), data presented by Cruden et al. (1981) from several species of *Salvia* are especially useful for comparison with data obtained from *S. divinorum*. Ornithophilous species of *Salvia* sampled by Cruden et al. included *S. cardinalis* (17.71 μmol per flower), *S. elegans* (7.52 μmol), *S. greggi* (3.49 μmol), and *S. pubescens* (20.72 μmol). Melittophilous species sampled included *S. tiliaefolia* (.015 μmol per flower), *S. reflexa* (.14 μmol), and *S. cohuiensis* (.53 μmol). Despite the fact that nectar accumulation data obtained by intermittently sampling flowers of *S. divinorum* grown in the greenhouse are plagued with inconsistencies, there is no question that the quantity of nectar produced suggests ornithophily, with measurements ranging from 8-16 μmol , most flowers producing a total quantity of nectar near 9 μmol . Still, several questions emerged, such as the possible negative effect of the intrusive sampling technique, the effect of nectar removal on secretion rates, and the effect of the time of secretion on the quantity of nectar produced, since flowering and nectar production were asynchronous.

No nocturnal visitors were observed during the overnight stakeout near flowering populations of *S. divinorum* at Cerro Quemado. Flowers opened asynchronously in the evening or during the night, and nectar production was also initiated asynchronously, mostly during the night. Virtually 3 of every 4 flowers had a hole punctured in the calyx and corolla tube, presumably by nectar robbers, and even many unopened flowers containing little or no nectar were pierced. At the first signs of dawn, under an overcast sky, a single, large hummingbird with a conspicuously decurved bill visited virtually every flower, flitting from flower to flower in an irregular fashion. It flew away in the direction of additional flowering stands of *S. divinorum*, and several minutes later returned and again visited most flowers. The nectar in most of the flowers was depleted by the bird, and pollen grains had been deposited on several stigmas. Two bumblebees were in the area but ignored the *Salvia* flowers.

The observations described can in no way be considered evidence for the co-evolution between *S. divinorum* and a species of hummingbird, especially in light of the many supposed melittophilous salvias that are visited by these opportunistic birds (Reisfield 1987). Still, dimensions of the corolla, nectar constituents, and the amount of nectar produced per flower, all suggest the ornithophilous syndrome. On the other hand,

anthropogenic distribution, white corolla color, sporadic and infrequent flowering of populations during most of the year, the great amount of nectar robbing, and apparent complete lack of fruit set, suggest the relationship between plant and pollinator has not been "fine-tuned" by natural selection.

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

The Barrier to Fertility



Meiocytes from
anthers of *S.*
divinorum
(Reisfield 1242)
flower buds were
suitable for
chromosome

counting during the first and second metaphase. No irregularities in pairing were observed, and the species was found to be diploid, with $n=11$ (photograph of squash in Reisfield 1987), which is the number most common in species of subg. *Calosphace*. Nevertheless, many examples of species are known in which chromosome pairing appears normal, but meiosis breaks down in the later stages and pollen grains fail to develop, due to various types and degrees of chromosome non-homology or genic sterility (Stebbins 1958). A failure during the late stages of meiosis or during gametogenesis would normally lead to unviable pollen grains, often reflecting a disharmonious interaction of parental genes, usually indicating hybridity. A scan of pollen from preserved flowers of *Salvia sessei* Benth. (Reisfield 1252), *S. flaccidifolia* Fern. (Reisfield 1218), and *S. mexicana* L. (Reisfield 1244), revealed that virtually all the pollen grains took up the stain. Pollen grains of *S. Divinorum* from greenhouse-grown plants (mixed collections) were much less viable, with 882 (56%) of the 1587 pollen grains observed aborted. Pollen from flowers of *S. Divinorum* collected at Cerro Quemado (Reisfield 1242) showed a similarly low degree of fertility relative to other *Salvia* species, with 1592 (53%) aborted pollen grains out of 3027 observed. Haplontic and/or diplontic sterility of interspecific hybrids is often similarly manifested, indicating the taxon may be of hybrid origin. Still, the inviability of the haploid stage in the life cycle is only partial, and can not explain why the plants apparently set no seed in Mexico.

Hand pollinations in the greenhouse clearly showed the chief barrier to fertility in *S. Divinorum* is not a failure to be pollinated. Of a total of 108 self-pollinations (108 stigmas dusted with pollen from the same plant or genetically identical plants), only 11



mericarps developed fully into dark, indurate, viable nutlets. Since each pollinated flower could potentially yield four nutlets, the 11 fruit represent 2.5% of a total potential yield of 432 fruit. Of 190 cross-pollinations, only 24 (3%) nutlets fully matured from a potential of 760 fruit. Most of the calyces abscised between 5 and 10 days after pollination, and quite often one or two (sometimes more) mericarps were noticed to be developing before the calyx and ovary fell from the plant. Several of the mature seeds were germinated in the UW



Greenhouses, and vigorous seedlings developed into plants indistinguishable (though not grown to flowering) from their parents. Since flowering is so sporadic in Mexico, pollination may, in fact, be undependable. Furthermore, pollen seems not to adhere to the stigma with great efficiency. Still, many viable pollen grains that were deposited on receptive stigmas did not lead to fruit set, indicating some failure after this stage in the life cycle of *S. Divinorum*.

It has been suggested that *S. Divinorum* is self-sterile (Vald s 1983; Vald s et al. 1987) which, if true, would explain the observed failure to set fruit. Individual populations all seem to be clonal, and plants of adjacent populations could feasibly be genetically identical. Given the anthropogenic distribution of *S. Divinorum* throughout the region inhabited by the Mazatec, it is also quite possible that many distinct populations are derived from a single source. Such a situation would explain why artificial cross-pollinations resulted



in no greater fruit set than self-pollinations, since the so called cross-pollinations would, in reality, be between genetically identical plants. Even if plants were not genetically identical, a common self-incompatibility factor shared by the functional male and female plants would prevent successful fertilization. This type of self rejection, though, seems to be rare in *Salvia* (few studies have been done), and also could not account for the reduction in pollen fertility.

Further resolution of the problem was obtained by studying pollen germination and tube growth through styles of hand-pollinated flowers. Of 39 styles observed, 13 (33%) had four or more pollen tubes that traversed the entire length of the style, reaching the ovary. Three or more pollen tubes reached the ovary in almost one half the styles observed. Of the 20 styles in which four or more pollen grains or tubes were observable at all, 14 had three or more pollen tubes that reached the ovary. Also, no difference was noted between the self- and supposed cross-pollinations.



In classical genetic self-incompatability systems, the site of pollen tube inhibition is on the stigma surface or somewhere in the style. A pollen grain may fail to germinate, or produces a tube that grows abnormally and is soon occluded by callose, or

produces a tube that is eventually rejected by the transmitting tissue of the style (Heslop-Harrison 1975). Although this type of active inhibition of the pollen tube may not be the only form of genetic mate discrimination in plants (Mulcahy & Mulcahy 1983), the best understood self-rejection systems (oppositional systems) do involve observable changes (e.g., swelling) in the growing tip of the pollen tube. No such abnormalities were observed for *S. Divinorum*, and no occlusions were found anywhere in the style. A barrier to seed set is apparently encountered after pollen tubes reach the ovary, at some point between the time the tube enters the micropyle of the ovule and the early development of the embryo. Since calyces often abscise while the included nutlets are developing, post-zygotic embryo abortion or endosperm failure is probable. Whether this is due to inbreeding depression, hybridity, or a late acting (delayed) self-incompatability reaction is difficult to know with certainty. The latter is unlikely, especially because gametogenesis and other stages of the life cycle are also irregular, and one would think the various aberrations have a common cause. Inbreeding depression is often the fate of taxa that become closely associated with man, and could potentially cause the observed irregularities.

The various anomalies that characterize *Salvia Divinorum* might perhaps be best explained as due to hybridity, but unfortunately, additional evidence is lacking. To none of the almost 500 species that comprise the Neotropical *Salvia* subg. *Calosphace* (Benth.) Benth. does *S. Divinorum* show any obvious affinity, nor is intermediacy between two known species evident. Although the various character states of *S. Divinorum* are encountered at one place or another within subg. *Calosphace*, I have been unable to identify the two



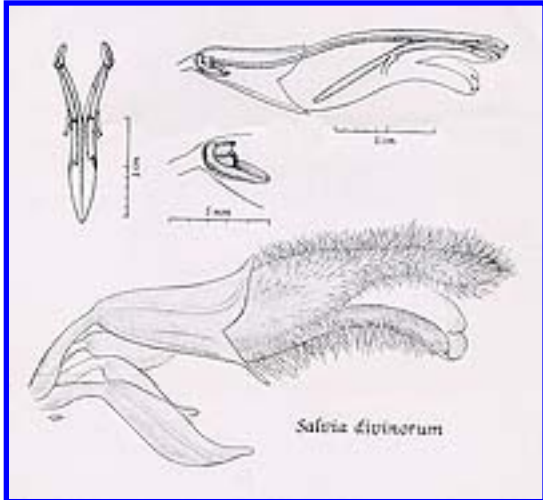
species, out of the hundreds, which, when crossed, might have produced offspring that look like *S. Divinorum*. The species is certainly anomalous in sect. *Dusenostachys* Epl. (Epling 1939), to which it was originally assigned (Epling & Jativa 1962).

The Mazatecs say that "La Maria [*S. Divinorum*] speaks with a quiet voice," which may explain, in part, why many issues concerning this enigmatic plant remain unsolved. Whether of hybrid origin or an inbred cultigen, questions regarding taxonomic affinities, fruit abortion, native distribution, and pharmacology are yet to be conclusively resolved.

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Amended Description of *Salvia divinorum*

Salvia divinorum Epl. & Jativa, Bot. Mus. Leaf. 20: 75- 76. 1962.
Type: Mexico. Edo. Oaxaca: San Jos  Tenango, 8 Oct 1962, *Albert Hofmann & R. Gordon Wasson s.n.* (holotype: LA; isotypes: LA in UC, ECON).



Perennial herb, mostly 0.5-1.5 m tall vegetatively, flowering stems 1-2(-3) m tall, taller stems decumbent for part of their length; stems often trailing along rocky streambanks, sometimes in running water, rooting copiously at the nodes and sometimes along internodes, with broken, trailing, and drooping stems resuming

erect growth at stem apices or by axillary branching, the new, vigorous shoots often arising from axils of old, senescent stems, these decaying or dead stems often appearing as woody caudices. *Stems* quadrangular, with flanged angles, hollow, fleshy and crisp, translucent, breaking easily, hirtellous, green. *Leaves* opposite, elliptic to ovate, acuminate to caudate at the apex, attenuate at the base, petioles scarcely differentiated from the blade, 10-25(-30) cm long, 5-10 cm wide, glabrous above, sparingly glandular-punctate below; margins irregularly serrate or crenate-serrate, to entire at the base. *Racemes* simple, erect, 30-40 cm long, with 2-4 cm long internodes; cymules with 3-6(-12) flowers each; rachis hirsute, glabrate. *Bracts* sessile, concave, ovate, rounded at the base, acuminate-caudate at the apex, 1-2(-3) cm long, 0.6-1 cm wide, mostly violet, tardily deciduous. *Pedicels* straight, slender, hirsute, violet, 4-9 mm long. *Calyx* gradually widened above, 10-12 mm long, with subequal lips, glandular-hispid along the veins in bud, glabrate to glandular-puberulent throughout, violet; upper lip 1.5 mm long, with 3 major veins. *Corolla* sigmoid, 28-32 mm long, densely villous with multicellular translucent hairs 0.5-2 mm long especially on upper and lower lips, glabrous within, white, drying brown in herbarium material, lips becoming tinged blue with age; tube 19-22 mm long, 2 mm high by 1.5 mm wide at the narrowest

point near the throat; galea (upper lip) 8-9(10) mm long; lower lip cupped, 5 mm long, 7 mm wide when flattened out, middle lobe emarginate. *Stamens* included within the galea, inserted near the throat, glabrous, white; connectives somewhat rigid, slightly arcuate, 15-16 mm long, 17-18 mm long when flattened out, rudders 10-11 mm long, entire; anthers 2 mm long; pollen white. *Style* 27-32 mm long, densely bearded below the stigma, white; posterior (upper) stigma branch exerted beyond the galea and curling upward, 2 mm long, 2.5 mm long when flattened out; anterior branch sometimes slightly exerted from the galea, somewhat carinate, 1.5 mm long. *Gynobase* horn 3 mm long, 1.2 mm wide, glabrous, white. *Nutlets* when mature 1.8-2 mm long, 1(1.2) mm wide, somewhat pyriform, minutely tuberculate, dark brown, to date never collected in the wild. *Endemic* to the Sierra Mazateca, Oaxaca, Mexico, at elev. of 300-1800 m, in primary and secondary cloud forest and tropical evergreen forest, with many populations cultivated or semi-cultivated (weedy), often spreading vegetatively along streambanks, flowering sporadically from September to May.

Specimens examined: MEXICO. Edo. **OAXACA**. Sierra Mazateca: 2 km NNW of Huautla market, 6 Jan 1984, *Reisfield & Solheim 1077* (WIS); 1 km SW of Huautla market, 15 Jan 1984, *Reisfield & Solheim 1090* (WIS); ca. 2 km SW of Huautla market, 15 Jan 1984, *Reisfield & Solheim 1092* (WIS); Huautla, 1960, *Wasson s.n.* (ECON); Huautla, 24 Nov 1962, *Bunnell s.n.* (LA in UC); Huautla, Sep 1957, Gomez-Pompa 500-E (GH); Cuauhtemoc, ca. 4 km NE of Santa Maria Chilchotla, 16 Jan 1984, *Reisfield & Solheim 1093* (WIS); La Soledad, ca. 3.5 km WNW of Ayautla, 13 Feb 1984, *Reisfield & Solheim 1111* (WIS); 2.5 km W of Ayautla on road to San Juan, 13 Feb 1984, *Reisfield & Solheim 1112* (WIS); Cerro Alto, ca. 2 km NE of Ayautla, 13 Feb 1984, *Reisfield & Solheim 1109* (WIS); Cerro Camaron: 0.5 km W of Cerro Quemado Centro, 8 Feb 1984, *Reisfield & Solheim 1102* (WIS), ca. 0.75 km W of Cerro Quemado, 9 Feb 1984, *Reisfield & Solheim 1103* (WIS), 1 km W of Cerro Quemado, 9 Feb 1984, *Reisfield & Solheim 1106* (WIS), 1.5 km W of Cerro Quemado, 9 Feb 1984, *Reisfield & Solheim 1107* (WIS), ca. 1 km NNW of Cerro Quemado centro, 10 Feb 1984, *Reisfield & Solheim 1108* (WIS), 1 km W of Cerro Quemado, 27 Oct 1985, *Reisfield 1242* (WIS); Cerro Quemado, 2 Mar 1980, *Valdes & Paul s.n.* (MICH).

UNITED STATES. **California**. California State University, Hayward, cultivated from material of uncertain origin, 24 Jan 1980, *Wilcox s.n.* (ECON); Northridge, California, cultivated at San Fernando Valley State College from material of uncertain origin, *Emboden s.n.* (ECON). **Michigan**. Univ. of Michigan Botanical Gardens, cultivated from material obtained at Cerro Quemado, 20 Apr 1980, 17 Nov 1980, *Valdes s.n.* (MICH).

THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Acknowledgements



I am grateful to Hugh H. Iltis and for funds provided by the E.K. and O.N. Allen Herbarium Fund. Mark Wetter and Don Waller offered helpful comments, L.J. Valdes generously provided potted plants, Steve Solheim assisted during fieldwork, and Robert Kowal and Ray Guries provided guidance and the use of their laboratory facilities. Thanks also to Irene Baker for nectar analyses and Lucy Taylor for artwork. Additional funding for fieldwork was provided by the UW Botany Department J.J. Davis Fund, the

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THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

Author's Comments 2/98

Since the original publication of the paper here presented, developments relating to *Salvia divinorum* psychopharmacology have been many. There is little doubt, today, that the compound salvinorin-A is psychoactive (an understatement, to be sure). Nevertheless, in many ways the plant continues to evoke awe and fascination, and continues to mystify both poet and scientist alike. To my knowledge, the botanical questions put forth in this paper remain, for the most part, unanswered. (ASR, 2-14-98).

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THE BOTANY OF *SALVIA DIVINORUM* (LABIATAE)

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- [*S. divinorum* greenhouse experiments \[13 photos\]](#)
- [Other Mexico Salvias \[27 photos\]](#)
- [Mazatec friends of *Salvia divinorum* \[9 photos\]](#)

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Photo Gallery of The Sierra Mazateca

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Near Huautla



Huautla



Near Huautla



Road to Huautla

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Photo Gallery of The Sierra Mazateca

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Huautla



Presa Miguel Aleman Dam.
Taken from Cerro Quemado



View from bedroom

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Photo Gallery of *S. divinorum* In The Wild

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Cerro Camaron



Cerro Camaron



Cerro Camaron



Near Huautla









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Photo Gallery of *S. divinorum* In The Wild

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Cerro Camaron



Near Huautla



Near Huautla



Near Huautla









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Photo Gallery of *S. divinorum* In The Wild

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Cerro Camaron



Cerro Camaron



La Soledad



Near Huautla









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Photo Gallery of *S. divinorum* In The Wild

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Cerro Camaron



Near Huautla



Cerro Camaron



Cerro Camaron











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From: Christopher B Reeve
Newsgroups: alt.psyoactives
Subject: Re: Mexican Mint (Salvia divinorum)
Date: Thu, 14 Apr 1994 21:31:34 -0400

> Does anyone know anything about S. divinorum?
> (Mexican Mint)
>
> I know that the Mazatecs used it for medicinal purposes,
> but i havent been able to find out what kind of stuff
> that they did with them.
>
> I also have had a hard time digging up any articles on it,
> i've found one that cites a couple others, but thats about it.

I'll do my best. Hope you don't already have this information. Before me, I have a copy of The Psychedelic Reader (selections from The Psychedelic Review), Edited by Gunther M. Weil, Ralph Metzner, and Timothy Leary (University Books. New Hyde Park, New York - available via your local interlibrary loan; mine's from Johns Hopkins):

"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 Patora, and they were found to be a species new to science: Epling and Jativa 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 pipiltzintzintli, the divine plant of pre-Conquest Mexico, identical with the Salvia divinorum now invoked in their religious supplications by the Mazatecs." (170)

"And here we revert to the miraculous plant that we think is the Salvia divinorum, called (as we believe) in Nahuatl pipiltzintzintli, 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 Beltran translates it as 'the most noble Prince' and relates it to Piltzintli, 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?" (182)

--

"There are a number of us these days who do not seek deliberately to go to prison but cherish a dream of being sent there to enjoy, paradoxically, true freedom." (Anthony Burgess, _1985_)

=====
From: Anonymous
Newsgroups: alt.drugs,alt.drugs.psychoactives,alt.psychedelics
Subject: Re: S. Divinorum (Diviner's Sage)
Date: Tue, 20 Sep 1994 17:16:33 -0800

The active component is salvinorin-A, a diterpene.

1. -- Dried milled leaves (200g) of *Salvia divinorum*, collected at Huautla, Oaxaca in November 1980, were extracted with boiling chloroform. Evaporation of the solvent gave a green residue (27g) which was purified by chromatography on "Tonsil" (200g) with chloroform as eluant. Thirteen fractions of 50.0 ml were collected, the sixth and seventh of which contained compound [A] as ascertained by t.l.c. (45% ethyl acetate in hexane as developer; R_f 0.7). Crystallization from the methanol yielded salvinorin [A] as colorless crystals, m.p. 238 -- 240 C...

Ortega, A., J.F. Blount, and P.S. Marchant. (1982) Salvinorin, a new trans-neoclerodane diterpene from *Salvia divinorum* (Labiatae). J. Chem. Soc., Perkin Trans. I:2505-2508

=====
From: cf501@cs.city.ac.uk (Steve Mynott)
Newsgroups: alt.drugs,alt.drugs.psychoactives,alt.psychedelics
Subject: Re: S. Divinorum (Diviner's Sage)
Date: 30 Sep 1994 10:22:09 GMT

I thought the following might be of interest. My understanding from reading this is that salvinorin A is **not** orally active, which may explain some of the confusion surrounding this substance and the mint.

Does anyone know what the chemical structure of salvinorin A looks like?
Maybe some ASCII graphics are in order...

SALVIA-DIVINORUM AND SALVINORIN-A - NEW PHARMACOLOGICAL FINDINGS
SIEBERT, DJ
POB 661552/LOS ANGELES//CA/90066
JOURNAL OF ETHNOPHARMACOLOGY 1994 V43 N01 PP53-56

The diterpene salvinorin A from *Salvia divinorum* (Epling and Jativa-M), in doses of 200-500 ag produces effects which are subjectively identical to those experienced when the whole herb is ingested. Salvinorin A is effectively deactivated by the gastrointestinal system, so alternative routes of absorption must be used to maintain its activity. Traditionally the herb is consumed either by chewing the fresh leaves or by drinking the juices of freshly crushed leaves. The effects of the herb when consumed this way depend on absorption of salvinorin A through the oral mucosa before the herb is swallowed.

Refs:

ORTEGA_A, 1982 P.2505, J CHEM SOC P1
VALDES_LJ, 1987 VOL.41 P.283, ECON BOT
VALDES_LJ, 1983 VOL.7 P.287, J ETHNOPHARMACOL
VALDES_LJ, 1984 VOL.49 P.4716, J ORG CHEM
WASSON_RG, 1962 VOL.20 P.77, BOTANICAL MUSEUM LEA
WASSON_RG, 1963 VOL.20 P.161, BOTANICAL MUSEUM LEA

=====
Newsgroups: alt.drugs
From: talis@starship.com
Subject: RE: Salvia Divinorum
Date: Fri, 07 Oct 94 17:52:37 -0400

Actually, I'd love to correct you.

According to T. McKenna, at a recent lecture, that I attended, He said the following about proper tech, `for using, *S. Divinorum*, or Diviners Mint.

To start, take 15-20 fresh leaves, remove the center stem, to reduce the bulk of the plant material.

Roll the leaves into a quid (ball), and put in your mouth

This should be done, in a dark room, with a digital clock visible

Watching the clock, chew on the leaves, for exactly 15 minutes, then spit them out.

Effects, should last about 45 minutes.

First of all, notices the major difference in the amount that you smoked, to the actual suggested number of leaves.

Also, I have never heard of smoking the leaves but you could probably use the dry leaves in the same way as the fresh leaves....

Blessed Be!

Talis

=====
From: pjordan@cab016.cs.ualberta.ca (Peter Jordan)
Newsgroups: alt.drugs,alt.drugs.psychoactives,alt.psychedelics
Subject: Re: S. Divinorum (Diviner's Sage)
Date: 20 Sep 1994 04:49:58 GMT

cfargus@netcom.com (Somnium "Watching-Owl" Regnum) writes:

>form' that is is active in the 200ug range. Yes 200 micro-grams. One puff
>of smoke is all it takes. I have heard that you can smoke the dried leaves;
>although he never mentioned that way of ingestion. So supposedly, there is

I don't know about this smoking thing

If the "prepared infusion ... is said to be stable for a day"
(pg. 296 Valdes), wouldn't you think drying followed
by smoking would certainly be ineffective.

Has any-one ever actually tried this ?

Reference: Ethnopharmacology of Ska Maria Pastora (Salvia divinorum);
L.J. ValdesIII, J.L.Diaz, A.g.Paul;
Journal of Ethnopharmacology, 7(1983):287-312.

Citingly;
Peter J.

=====
From: ebrandt@muddcs.cs.hmc.edu (Eli Brandt)
Newsgroups: alt.drugs,alt.drugs.psychoactives,alt.psychedelics
Subject: Re: S. Divinorum (Diviner's Sage)
Date: 21 Sep 1994 03:34:54 GMT

An Anonymous author wrote
>The active component is salvinorin-A, a diterpene.

Salvinorin A is a bioactive compound isolable from /S. divinorum/. It
is not at all clear that it's responsible for the plant's more
interesting effects, however. I'll admit that I haven't read the

papers by Valdes' group, but Ott's assessment of the tests in animals is that "the primary effects of salvinorin A was sedative". The whole leaves do not have this as their primary effect.

If anybody knows of informal human assays of salvinorin A, we'd all like to hear about it...

Eli ebrandt@hmc.edu

=====
Newsgroups: alt.pschoactives
From: Anonymous
Date: Tue, 6 Sep 1994 07:57:01 UTC
Subject: Salvia Divinorum Info

Salvia divinorum is easily grown in the northwest U.S. -- after seeing a friend's plant in Portland, I suddenly realized what a healthy plant looks like. For a year, I had been struggling to get a few cuttings going in the very different climate of southern New Mexico: the result, inevitably, was a drooping plant with blackening (i.e. useless) leaves. Up in the pacific northwest, however, at least by the coast, the plant thrived, growing easily in a bathroom on a shelf away from the window and direct sunlight.

For would-be enthusiasts in the northwest: you've pretty much got it made. The only worry would be to keep the plant from freezing (i.e., keep it inside!). You don't need anything except indirect sunlight. Indeed, live Salvia divinorum plants have been seen (by this author) for sale in a plant shop right off the Pike Place Market in Seattle. You just need to look around -- more people are growing it than you might think.

On the other hand, would-be growers in the southwest and central U.S. are looking at an entirely different scenario: you need to build a humidity tent of some kind. In the spring the plant will appear to thrive; however, come the hot summer, plants will easily die. You've got to do something -- why not build a small structure (with PVC pipe perhaps? I use bamboo, which grows in my garden. Avoid wood, as this invites mold with all the misting you'll have to do. And mist it you must. S. divinorum requires high humidity, and will shrivel and die without it. Just use a spray bottle to mist inside your tent 3 times a day or so. Oh, and another thing is to place your (preferably peat) container in a dish of vermiculite which is regularly sprayed -- helps keep things humid, you see. S. d. plants can survive even the hottest New Mexico summers with this kind of attention.

As far as getting the plants goes, as I said, look around. There are plenty of suppliers, you just have to use your brain and check into it. The plant is not illegal. As far as Seattle residents, you need to just look for it while you're shopping at Pike Place Market. A friend found a (VERY healthy) specimen there.

Useage? Dry the large leaves and smoke them. Put them in a waterpipe -- it uses the material more efficiently. After about 6 or 7 puffs of the leaves, the normal user will be stopped in his/her tracks, and probably want to lie down and recieve the mental information this plant has to offer. You will probably be taken down trains of thought independantly of your intellect, which is off in the back smoking cigarettes with your ego while the divine plant is operating. Make no mistake -- this is hardly just another plant to get "wasted" with -- the insights gained by *S. divinorum* are often _cerebral_, sometimes visual, sometimes not. But whatever the effects, they are gone completely within 1-2 hours. You'll find a great difference in effects, compared to other psychedelics. In particular I (personally) notice a distinct cooling of body temperature after the 3rd or 4th hit, a unique feeling I've never felt on any other psychedelic. I wonder if others have noticed this also?

My advice is, first, get some good books on the subject -- you can't expect to get this kind of information off the internet or in High Times, for example. You need to read _Pharmacotheon_ by Ott, or Valdez and Diaz's excellent _Journal of Ethnopharmacology_ article (#7, 1983 pps 287-310) -- go to your local university library and photocopy it. Another good book is Riedlinger's (ed.) _The Sacred Mushroom Seeker_, which contains a very good essay on *Salvia divinorum* by Albert Hofmann (recommended!).
(typo above... read: Journal of Ethnopharmacology....)

In other words, don't be afraid to educate yourself seriously about this plant -- it's essential; you can't appreciate how important a plant this is otherwise (and *S. divinorum* is one of the world's rarest plants -- so appreciate whose selling you a cutting!). Remember, Maria Sabina would have wanted it that way -- don't profane the sacred by looking at this as some sort of easy high -- it isn't. The plant requires your care and attention before it will impart any kind of experience to you. The experience granted is well worth the time and effort to cultivate them properly. As one user said: "I'm investigating the *Salvia divinorum*... although sometimes I think that the *Salvia divinorum* is investigating _me_..."

and that just about says it all, doesn't it? If you have other questions or other *divinorum* debate, please post it here.

Infinity Spectrum

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Boosting Salvia with MAOI's

I have had good experiences smoking 50-75mg of harmala extract (standard Syrian Rue acid/base technique) prior to smoking Salvia. Definitely boosted it by 2X and extended the later stages of the zone for me. I also noticed that my body relaxed into it and was more allowing of her grace with the tranquilizing effect of the harmala. Good mix for sure...

Toad

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Salvinorin A: Notes of Caution by Daniel J. Siebert

(Previously published in "The Entheogen Review" Vol. 3, No.4: Winter Solstice, 1994)

Salvinorin A (the major active principal of the plant *Salvia divinorum*) is an extremely powerful consciousness altering compound. In fact it is the most potent naturally occurring hallucinogen thus far isolated. But before would-be experimenters get too worked-up about it, it should be made clear that the effects are often extremely unnerving and there is a very real potential for physical danger with its use.

When the herb *Salvia divinorum* is consumed either by smoking the dried leaf or chewing the fresh leaves the effects are usually (but not always) pleasant and interesting, this is because when used this way the amount of salvinorin A absorbed into the blood stream is usually very small and in the case of the chewed leaves it is absorbed into the blood stream very gradually.

The pure compound salvinorin A is active at 200 - 500 mcg when vaporized and inhaled. Since very few people have the costly equipment necessary to accurately weigh anything close to this small an amount, it is inevitable that people will try to visually estimate the dose. Unfortunately there is little room for error before the effects become potentially dangerous. When the dose goes above 500 - 1000 mcg the effects can be very alarming, I have seen several people get up and lunge around the room falling over furniture, babbling incomprehensible nonsense and knocking their heads into walls. Several people have tried to wander out of the house. When the experience is over they have no memory of any of this. In fact they usually remember very different events. To an outside observer people in this condition have a blank look in their eyes as if no one is present (and perhaps no one is). It is also common for people to have a facial expression which is probably best described as being like that of a frightened animal. It appears that at these "larger" doses one completely loses awareness of, and control over, the physical body and for some reason part of the brain causes the body to get up and move about recklessly while the individual has no awareness of where their physical body is or what it is doing. It seems inevitable that one of these days some careless person will do too large a dose without a sitter and will wander out in the street, or hurt themselves in some way.

Because the dose is so small and insignificant looking, there is a tendency for people to think they need more than what they are told is a safe dose. Another problem is that the technique of vaporizing and inhaling the compound can be a bit tricky. Salvinorin A has a relatively high boiling point and people often don't get it hot enough to remain a gas all the way down into the lungs. Another problem is that so little is used that the vapor often disperses before it gets inhaled. Sometimes people just don't hold the vapor in their lungs long enough for thorough absorption. Several people after trying a dose in the recommended safe range and not getting an effect assumed that they needed a larger dose, when in fact the problem was that they did not vaporize the material efficiently the first time. I have already seen more than one intelligent, careful and experienced person accidentally do too large a dose because of this. Fortunately they had sitters and managed to get through the experience safely.

It is also important to understand that there have been no toxicological studies of this compound in humans. It is true that the Mazatecs have used the plant for a very long time and don't seem to have problems with it, but when the pure compound is used it would be a simple matter to consume a dose hundreds of times greater than anything ever encountered by the Mazatecs.

Not only is salvinorin A chemically different from other hallucinogens (it is a diterpene not an alkaloid) but its effects are quite different as well. Many people consider the effects less manageable and harder to work with than other entheogens. The majority of people who have had a full blown experience with salvinorin A are reluctant to ever do it again. Anyone choosing to experiment with this compound should always have an alert, clear-thinking sitter present to prevent them from injuring themselves or others.

Salvia divinorum as an herb can be used quite safely and many people claim that it has proved beneficial to them. Hopefully there will not be a rush to isolate the pure compound as it is almost inevitable that it will cause problems, people will get hurt, the compound and possibly the plant will get negative attention and it will become scheduled. We will just be adding one more potentially valuable plant ally to the list of species which are already feared and condemned in our society. If you choose to pursue a relationship with this plant please treat it with respect and care. Perhaps if people can use the plant safely and responsibly it will be able to grow and thrive freely into the future.

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Salvia and Drug Tests

by Erowid

Tested for in Standard Drug Tests ?	NO
Tested for in Extended Drug Tests ?	NO
Possible to Test for?	Unlikely
Detection Period in Urine	unknown

We have never heard of a possible test for Salvia metabolites in urine. Most importantly, Salvia is not illegal, so its presence should not be of concern even if testing is possible.

INFORMATION

[Drug Testing Vault](#) 

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Drug Testing Basics

by Erowid

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1. [What do they Test for?](#)
2. [Test Types](#)
3. [Test Sensitivity](#)
4. [Detection Periods](#)

WHAT DO THEY TEST FOR?

The first thing to know about drug testing is what the standard test looks for. What is being tested for varies greatly based on testing company, expense, expectations, federal requirements etc. Following is a description of what to expect from the standard tests.

The NIDA 5

Federal government guidelines (by NIDA-The National Institute on Drug Abuse and [SAMHSA](#)-The Substance Abuse and Mental Health Services Administration) require that companies which use commercial class drivers licenses for employees must have a testing system in place. Among other things, this required testing program must test for 5 specific categories of drugs (sometimes referred to as the "NIDA 5"). Because of this federal requirement, most drug testing companies offer a basic drug test which checks for drugs in these 5 common categories. Click on the substance name for a description of the laboratory method for detecting the substance.

1. [Cannabinoids](#) (marijuana, hash)
2. [Cocaine](#) (cocaine, crack, benzoylecognine)
3. [Amphetamines](#) (amphetamines, methamphetamines, speed)
4. [Opiates](#) (heroin, opium, codeine, morphine)

5. [Phencyclidine](#) (PCP)

Expanded Tests

Most drug testing companies also offer an expanded test which includes a few additional drugs in the testing process. Most do not add all of these in their expanded test, but choose a different combination of 3 or 4 to add :

1. [Barbituates](#) (Phenobarbital, Secobarbital, Butabital)
2. Methaqualone (Qualuudes)
3. [Benzodiazepines](#) (Valium, Librium, Serax, Rohypnol)
4. Methadone
5. Propoxyphene (Darvon compounds)
6. [Ethanol](#)

Additional Testables

In addition, there are a few other substances which it is possible but quite unusual to test for. I only found reference to testing for these additional substances at 1 (out of 15) drug testing site :

1. LSD
2. Hallucinogens (Psilocybin, Mescaline, MDMA, MDA, MDE)
3. Inhalents (Toluene, Xylene, Benzene)

TEST TYPES

There are three primary types of drug tests: blood, urine, and hair. Most common is the urine test which has the benefit of being inexpensive and less intrusive than the blood test.

Urine Tests

- Are the least expensive of the test methods (~\$25-\$50)
- Can be done at home (for example by parents).
- Detect use primarily within the past week (longer with regular use).
- Can be affected by abstaining from use for a period of time before the test
- Are often temperature tested to insure sample integrity

Hair Tests

- Are considered the least intrusive method of drug testing.
- Are currently many times more expensive than urine tests (~\$100-\$150).
- Detect substance use over a longer period (see [detection period](#))
- Do not usually detect use within the past week.

- Require a sample of hair about the diameter of a pencil and 1.5 inches long. They can not be done with a single hair.
- Test positive a little more than twice as often as a urine test. In a recent study, out of 1823 paired hair and urine samples, 57 urine samples tested positive for drugs of abuse; while 124 hair samples from the same group tested positive.
- Are not significantly affected by brief periods of abstinence from drugs.
- Can sometimes be used to determine when use occurred and if it has been discontinued. Drugs, such as opiates (codeine, morphine, heroin) lay down on the hair shaft very tightly and are shown not to migrate along the shaft, thus, if a long segment of hair is available one can draw some "relative" conclusions about when the use occurred. However cocaine, although very easy to detect, is able to migrate along the shaft; making it very difficult to determine when the drug was used and for how long.
- Claims to be able to reliably differentiate between opiate and poppy seed use
- We've recently heard (8/2001) that many hair tests now check for more than the NIDA 5, and include at least Cannabis, Ecstasy/MDMA, Cocaine, Opiates, Methamphetamine, Amphetamine, Phencyclidine (PCP), Benzodiazepines, & Barbiturates.

Blood Tests

- Are considered the most intrusive method of testing.
- Are the most expensive method of testing
- Are the most accurate method of testing
- Are the least common method of testing (most likely due to cost)

TEST SENSITIVITY

The Substance Abuse and Mental Health Services Association (SAMHSA) provides guidelines for what qualifies as a positive drug test. If a test does not give results higher than the guidelines, it does not qualify as a "positive" test. If an immunoassay test gives positive results, a second Gas Chromatography test must also give positive results before a result of "positive" is announced. The following chart shows the guidelines by substance.

SUBSTANCE	IMMUNOASSAY	GC / MS
Cannabis	50 ng/ml	15 ng/ml
Cocaine	300 ng/ml	150 ng/ml
Opiates	300 ng/ml	300 ng/ml
Amphetamines	1000 ng/ml	500 ng/ml
PCP	25 ng/ml	25 ng/ml

Some companies are getting around these guidelines by reporting the levels found without

categorizing them as a "positive" or "negative" test. This seems to be a problem primarily with mail in home tests rather than corporate testing.

DETECTION PERIODS

SUBSTANCE	URINE	HAIR
Alcohol	6-12 hrs	n/a
Amphetamines	4-5 days	up to 90 days
Barbiturates	2-12 days	n/a
Benzodiazepines	1-42 days	n/a
Cannabis (single use)	24-72 hrs	up to 90 days
Cannabis (habitual use)	up to 12 wks	
Cocaine	4-5 days	up to 90 days
Codeine/Morphine	2-4 days	up to 90 days
Heroin	8 hrs	up to 90 days
PCP	2-10 days	up to 90 days

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Drug Testing Information

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Amphetamines	Cannabis	Cocaine	DMT
DXM	GHB	Ibogaine	Ketamine
LSA	LSD	MDMA (Ecstasy)	Mescaline
Methamphetamine	Mushrooms	Opiates	Salvia
2C-B	5-MeO-DMT		

INFORMATION

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[Drug Test Defense Products \(System Cleansing, Additives, Replacement Urine\)](#) ⚙

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[NORML - Drug Testing History](#)

HOW TO PASS

[Fooing the Bladder Cops](#) ⚙

[How to Pass a Piss Test](#) ⚙

[NORML - Drug Testing Tips](#)

ACLU

[ACLU Drug Testing Briefing](#) ⚙

[ACLU on the Inaccuracy of Hair Tests](#) ⚙

[Drug Testing: A Bad Investment](#)

[ACLU Drug Testing Documents](#)

EXPERIENCES

[Using an Additive \(success\)](#) ☼

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[Success with Shampoo](#) ☼

LAW & POLICY

[Supreme Court Strikes Down Secret Hospital Drug Testing](#) ◀NEW

ARTICLES & WRITINGS

[Your Analysis is Faulty: How to lie with drug statistics](#) ☼

[Why Restrict Private Drug Testing?](#) ☼

[Drug Testing is a Bust](#) - Health Magazine, Sept 1993 ☼

[Drugs of Abuse and Their Detection in Urine](#) ☼

[New Drug Tests Use Hair](#) - AP ☼

[Drug Testing, Is It Worth It?](#) ☼

[Horror Stories of Drugs in the Workplace Don't Hold Up](#) ☼

[Pissing Away](#) - Eye Weekly ☼

[Test Your Government, Not Your Urine](#) ☼

[Urinalysis or Uromancy? - NORML](#)

[The Specter of Urine Testing - High Times](#)

[ACLU - Drug Testing in the Workplace](#)

ARTICLES ON PILL TESTING

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BOOKS

[Steal This Urine Test: Fighting Drug Hysteria in America](#) ☼

[Ur-ine Trouble: The Truth about Drug Tests](#) ☼

[Under the Influence?: Drugs and the American Work Force](#)

[Drug Testing: The Right to Privacy vs The Right to Test](#)

[Drug Testing at Work : A Guide for Employers & Employees](#)

[Drug Testing: Issues and Options](#)

[Drug Test Interactions Handbook](#)

[Drugs, Drug Testing and You](#)

OFF-SITE DRUG TESTING RESOURCES

[The Urine Test Mailing List Page](#)

[Drug Testing Clearinghouse](#)

[Lindesmith Center - Drug Testing](#)

[Companies That Drug Test](#)

[The Non-Tester's List](#)

[High Times on Drug Testing](#)

[NORML - Drug Testing](#)

[Teen Challenge - Technical Listing](#)

[Anti Bladder Cops Society](#)

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[Health World Online - Drug Screens](#)

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[Drug Detection Services - List of Testable Substances](#)

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Sage Wisdom

Salvia divinorum Branches Out

by Robert Campbell

[The Resonance Project](#)

Issue 1, Summer 1997

An intriguing member of the enormous botanical family Labiaceae (mint) has recently exploded onto the entheogenic scene. Due in part to a wealth of new information on the subject, as well as the legal availability of both dried leaves and live cuttings, *Salvia divinorum* has become a center of interest for a new breed of psychedelic explorers. Through knowledge shared on the Internet, by word of mouth, and in recent books, this humble, rare plant from the highlands of Mexico has been able to rapidly propagate itself throughout the entire world.

Salvia divinorum has been known by a host of other names through time, including Yerba de María ("Herb of María"), hojas de la Pastora ("leaves of the Sheperdess"), Hierba de la Virgen ("Herb of the Virgin") and most commonly, simply "Salvia." The English translation of the Latin name *Salvia divinorum* is also commonly used, with some referring to the plant as "Diviner's Sage" or "Diviner's Mint."

In *Plants of the Gods*, Hofmann and Schultes describe *Salvia* as "a perennial herb 3 ft (1 m) tall or more, with ovate leaves up to 6 in. (15 cm) and finely dentate along the margin. The (white flowers, bluish in old age) borne in panicles up to 16 in. (41 cm) in length, are approximately 5/8 in. (15 mm) long."

Account " ... A typical element of the *Salvia* experience seems to be spirals and recursions. During one song, I was in a kind of tube which wound into a spiral and became more and more complex in more and more dimensions. I was completely stuck in this thing and thought I'd never be able to escape. Then the song stopped, and I was free."

Traditional Usage Little is known about *Salvia*'s traditional use as an entheogen. It has been suggested as the most likely candidate for pipiltzintzintli, an ancient Aztec shamanic preparation. Some researchers dispute this claim, believing that pipiltzintzintli is in fact *Cannabis sativa*. At any rate, the Mazatec Indians of Oaxaca, Mexico, are the only people known to use *Salvia* in curing rituals at the present time (with the exception of recent experimentation by Western enthusiasts).

In the autumn of 1962, R. Gordon Wasson, (famous for having brought the ritual use of psilocybian mushrooms into the public eye with his *Life* magazine article), and the noted chemist Albert Hofmann took part in an expedition attempting to secure a sample of the magical plant for chemical analysis. The Mazatec curanderas (shamans) who had helped Wasson find the famous mushrooms were again very generous, and introduced the plant to Wasson and Hofmann's party. After securing the leaves, it was agreed that a velada (divining ceremony) would be held. Hofmann presents the details of this ceremony in a wonderful essay entitled "Ride Through the Sierra Mazateca in Search of the Magic Plant 'Ska Maria Pastora.'"

It was not surprising that the ceremony was very similar to those involving psilocybian mushrooms that Wasson had previously participated in, as the plant and the fungi seem to be used almost interchangeably in divining ceremonies. The velada did not begin until late at night. Candles and copal incense were lit, and pairs of leaves were laid out for each participant, with the curandera judging the dose —six pairs for both herself and Wasson. Hofmann was ill, so he refrained from ingesting the leaves, opting instead to just take notes.

The curandera crushed the leaves with a stone metate, and the liquid was squeezed into cups. These cups were, as a final measure, bathed in copal smoke. Before consuming the potion, the participants were asked to make vows regarding their faith in the truth and holiness of the ceremony. The bitter potion was ingested, and, with the flames of the candles snuffed, the journey began.

The results of the velada were certainly intriguing enough to warrant further investigation by modern researchers. After 20 minutes, one member of the party saw "striking, brightly bordered images." During a later ceremony, the whole party, under the guidance of famed curandera Maria Sabina, took psilocybian mushrooms while Hofmann alone took a potion made of the leaves. Hofmann described the effects of the potion as a "state of mental sensitivity and intense experience." He did not, however, experience any hallucinations.

Account "I closed my eyes and lost all sense of my physical self. I roared through a void. I was surrounded by a space of myriad expanse, yet there was nothing there. I was exploding in all directions at once, expanding, twisting outward, yet there was nothing through which to be moving. I flew, I floated, I flourished. The dark matter sang with energy. Just as the abyss about me had a form, so its silence was an ecstatic polyphony. My senses rang with delight."

Modern History For some time the active ingredient in *Salvia divinorum* remained unknown. Because it bore no resemblance to any other known entheogen, researchers were baffled. However, thanks to many years of dedicated underground research, the primary active ingredient of *Salvia divinorum* has now been identified as salvinorin A (C₂₃H₂₈O₈) —the most potent naturally-occurring psychedelic ever discovered, being active in doses as small as 100-200 micrograms. This is only a slightly higher dose than is required for LSD-25, which is considered to be one of the most potent psychoactive chemicals known.

Methods of Ingestion *Salvia divinorum* can be ingested in a number of ways. Tradition would have the practitioner drinking a liquid as explained above, or else chewing a quid of leaves for some time. Modern explorers, however, have stumbled upon other techniques which bypass the bitter taste and the length of time which the chewing must occupy. The first and simplest of these is to smoke the dried leaves. The psychonaut with more time and patience can prepare an extraction which is extremely potent, perhaps dangerously so (see precautions below).

Smoking seems to be the most effective and enjoyable method of using *Salvia divinorum*, and is particularly suitable for first-time users. If the reader is interested in taking the leaves orally or preparing an extract, resources for further research can be found following this article.

A Smoked Entheogen An ample dose for smoking *Salvia divinorum* is roughly two medium leaves, dried and crushed. These are loaded into a pipe (a waterpipe being preferred), and normal smoking procedure is followed. Although casually smoking the leaf is pleasant and will yield a mild psychoactive experience, experimentation has revealed a certain smoking technique which seems to be particularly effective at producing entheogenic results.

First, as with all entheogens, set (psychological environment) and setting (physical environment) need to be established. When using any psychoactive compounds for experimental or spiritual purposes, an environment approximating sensory deprivation always provides spectacular results. While the distortions of music, light, and other media can be amusing, they are quite trivial when compared to a breakthrough *Salvia* experience in a dark and quiet room. Some explorers find that a bathroom or walk-in closet are convenient chambers in which to perform the ritual.

One should keep in mind that walking after smoking *Salvia divinorum* is difficult at best, so cushions or a bed are recommended. One method to insure darkness and comfort is to smoke the leaf while sitting on a bed, and then lie down and apply a blindfold as the first effects are felt. It is advisable to have an assistant present to remove the pipe and flame source after actual ingestion occurs. Once a dark, quiet, and comfortable environment has been created, one is ready to smoke. A deep inhalation and even deeper exhalation help clear the lungs and prepare them for the heavy load to follow. It is imperative that the practitioner ingest as much smoke as possible in a single inhalation. With a slow but steady rhythm, the smoker should take the smoke deeply into the lungs. If you hold the smoke long enough, you should begin to feel the effects even before you exhale.

The *Salvia* leaf produces a relatively cool smoke, particularly when filtered through water, which does not seem to significantly diminish the potency. The smoking process will likely be enjoyed by all but the most sensitive of smokers. With correct setting, technique, and potent leaves, the single hit smoking method should be successful.

However, those with a large body mass or resistance to entheogenic effects would do well to repeat the above procedure as many times as necessary. It should also be noted that many experimenters, especially during the first exposure to Salvia, have a difficult time "breaking through" and often claim that nothing happened.

Account "I had the impression of being in a lunar emerald labyrinth that self-crystallized before my eyes. There were not full blown entities, but there was definitely creature-like and organic movement. It was silent, a visit to the ice palace, like watching winter pass in fast forward, a self-transforming orchestra of icicle geometries. Extremely pleasant to the eyes - entrancing really. It made for a half hour of brilliant elation and then began to recede, melt away, like the gossamer layers of glaze on a fine oil painting diffusing one by one, until I was left with only the unrefined vague gestalts which all too often inhabit my inner world."

Duration of Effects Within 30 seconds of the initial inhalation, definite changes in the smoker's perception should be apparent. As the salvinorin A enters the bloodstream, the smoker will feel a humming and tingling which ripples in waves all over the body. The "peak" of the experience will occur within a minute, and typically continue for as long as two to three minutes. The sensation abruptly tapers off after this point, leaving one quite near baseline within seven to ten minutes, and completely back to normal within twenty minutes to a half-hour.

There have been no known reports of users experiencing pain or discomfort when using the plant as described above. However, it should be noted that in some cases the smoker may experience small headaches or moments of slight dizziness which can last the rest of the day. This is generally perceived as a feeling of slightly altered or enhanced awareness, accompanied by the presence of unfamiliar energies in the body and mind.

Walking immediately after smoking Salvia divinorum is not advised. Severe distortions of time and space are the hallmark of the plant's effects on the human nervous system. It may appear that one's vision or center of gravity is being sucked towards the floor, or as in one amusing case, towards a wall. An extremely curious explorer might simply wish to stand and take a step or two to verify this effect, but please understand that many have already found out the hard way that stairs are an inappropriate place to enjoy Salvia divinorum's effects.

A Precaution Driving or operation of heavy machinery should not be considered safe until at least an hour of recovery has passed. As always, exercise caution when sampling this plant, as it is capable of very powerful alterations of perception. Please be warned that this is the wrong plant to use in public or during recreational activities. As Salvia divinorum is currently not scheduled, some have suggested it as a likely Cannabis substitute. However, the two are certainly not interchangeable.

Typical Effects of Smoked Salvia Salvia divinorum, like all entheogens, has different effects on different users. Still, some common themes present themselves. One of the most striking features of a breakthrough Salvia experience is the distortion of linear time. Sometimes, it seems as if one simply escapes linear time altogether and finds that all temporal coordinates are randomly accessible instantaneously. Visual distortions are also reported, but they tend to be vague, slippery, and ambiguous.

Many users report contact with hyperspatial entities, spirits, or intelligences, but the nature of these entities is rarely constant across different experiences. On the contrary, it seems the plant uses the personality of the explorer to present its message. Some have found that Salvia transports the practitioner to a state of meta-consciousness which seems to be both ancient and familiar —possibly a reflection of the state which one experiences before birth and after death. It has been noticed that the distinction between the mental and physical becomes rather fluid after ingesting Salvia. The mind seems to be made of physical fields which can be manipulated like muscles. By experimenting and flexing these mental muscles, one will eventually become adept at navigating through the Salvia dimension.

Another persistent theme in Salvia trips is that of rotation. Several explorers have reported a feeling that is similar to the lateral rotation which excessive alcohol consumption brings about, yet not as nauseating. At times this rotation has been so powerful as to form an "edge" somewhere inside the body. I have at times even felt this edge scraping along the roof of my mouth. While startling, these effects are generally not unpleasant. Another common observation in many Salvia trips is that some kind of tube or flexible tunnel appears which leads away from the explorer like a hallway. Some have related these tubes to spokes on a wheel, others as doorways to alternate dimensions.

There don't appear to be any long-term physical or psychological side-effects from smoked Salvia divinorum. It is over quite quickly, and many smokers have, in times of anxiety, successfully aborted a deep Salvia trip by just sitting up and "shaking it off." In fact, as the Mazatec suggested to Wasson, the correct attitude of acceptance

and faith seems imperative in being able to make contact with the plant's deeper essence. `

Account "When I exhaled, I received a flood of colorful visions, swirling patterns of light against a dark space-like background. This swirl formed a tunnel, which led from somewhere in front of me to "behind" my eyes. By thinking about it, I could move my perspective a little bit. My peripheral vision and imagination were filled with what seemed like two beings. One was old and male, one was young and female. They were encouraging me to look straight through the tube and align my center of vision with it. They were saying 'a little to the right, come on, don't wait until you are dead to see this. It is great!'"

On Breaking Through As mentioned earlier, many people attempt to smoke *Salvia divinorum* and fail to achieve any noticeable effects. One can only speculate as to why this occurs. It is certainly possible that smoking technique may be responsible for the success some enjoy, yet as the technique is so simple this is not very probable. It is more likely that the *Salvia* experience is simply a very fragile trance, and those who are more open to it are likely to experience deeper effects. It is possible that prior exposure to novel psychic states aids in the attempt to access the *Salvia* dimension, yet several seasoned explorers have nonetheless reported failure. It seems that as with Cannabis, many people simply need to "learn" to receive the effects by performing several attempts, usually achieving success after four or five.

It is also suspected that some leaf samples are either less potent to begin with, or that they lose potency when not stored properly. Upon securing some particularly potent leaves and realizing their effectiveness, they were shared with several people interested in the plant's effects. After being informed of proper technique, a nearly uniform success rate was achieved, with several of the experimenters reporting utter amazement at the power of the plant.

Conclusions and Further Precautions Taking into account the frequency of "hit or miss" experiences reported with *Salvia divinorum*, it is not surprising that it has remained relatively unknown for so long. Many have speculated that *Salvia* is not psychoactive in any way, but that it merely acts as a placebo. Others have argued that *Salvia* is only mildly psychoactive, and that its effects are usually exaggerated. However, with the successful isolation of salvinorin A, *Salvia*'s psychoactivity can no longer be doubted.

The effects of pure salvinorin A are quite intense. When smoked, the amount of salvinorin A that would fit into a glob on the tip of a needle could easily put a grown man into near catatonia in seconds. The effects fade within minutes, but since such a small amount is needed to produce such an enormous effect, many are wary that some under-cautious explorer will overestimate the necessary dosage. Although no lethal overdoses have been reported from *Salvia* or salvinorin A, many still fear that widespread distribution of pure salvinorin A will inevitably lead someone into an overdose or a bad accident. Let us hope this is not the case. *Salvia divinorum* makes a lovely house plant, and is currently perfectly legal to both cultivate and possess. Your respect for the plant and its responsible usage will ensure that it stays this way.

The accounts of *Salvia divinorum* ingestion were taken from the Lycaeum Trip Report Archive, which can be located at <http://www.lycaeum.org>. Note that these reports are taken out of context, and the serious researcher would do well to read the originals in their full form.

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High-Strength Extractions of Salvia Divinorum

by The Rev. Dr. Moo Moo

See also : [Isopropanol or Reagent Grade Acetone](#)

See also : [Denatured Alcohol Extraction](#)

After several months of experimentation with various types of Salvia extractions, i have finally settled on the following method as being the easiest and least expensive method for home cooks. The extraction is basically in two parts. The first being an extraction with water, and the second with acetone. This method produces high quality extracts by removing most of the resins that would leave you with a gummy mess. Home extractions up to 20x are possible in this manner. Please be aware that acetone is flammable and its vapors toxic.

for this you will need:

- 100 grams salvia divinorum (whole leaf or large pieces preferred)
- 1 large mixing bowl
- 1 large piece of muslin or cheesecloth
- 1 gallon COOL distilled water (but not cold)
- 1 large glass baking dish (9x13 or so)
- a coffee grinder
- 2 quart mason jar (must be glass)
- 1/2 gallon of acetone(do not buy "extra strength" or anything like that, and please evaporate a few ounces to be sure it does not leave any residue, if it does, do not use it)
- several coffee filters
- 1 wire strainer (6 inch or so, to fit the coffee filters comfortably, cannot be plastic)
- 1 small glass dish for evaporation (we use one that is 5 inch wide and 3 inch tall)

The recipe:

Take your mixing bowl and place the muslin or cheesecloth in it so that the edges are liberally draped over the side of the bowl. Place the whole Salvia leaf on the cloth. Fill the bowl with COOL distilled water to generously cover the leaf. Be sure to submerge and wet all the leaf. Allow this to sit for ten minutes (no longer, and if your leaf was crushed it should be for a shorter period, say 7 minutes). Gather up the edges of the cloth to make a bag around the leaf and lift it out of the water to strain the leaf. GENTLY squeeze most (but not all) of the water from the leaf. Discard the water. While Salvinorin is insoluble in

water, it is quite probable that a small amount was lost in this step, being pulled out along with the resins and oils which it is soluble in. This is bearable when one considers that 12 grams or so of gooey resins were just removed from your final product. Place the leaves in the glass baking dish and dry in the oven at 200 degrees, turning and fluffing the leaf every couple of hours. When it is COMPLETELY dry, remove it and allow it to reach room temperature. Verify at this time that the leaf is in fact dry. Remove the amount you will use for the final product, crush it and set aside (5x=20g, 10x=10g, 15x=6.5g, 20x=5g). Grind the remaining leaf in the coffee grinder or blender to a powder. NO PLASTICS should be used beyond this point as the acetone will dissolve them. Place the powdered leaf into one of the mason jars and cover it generously with acetone. Allow this to sit for 24 hours, stirring it a few times. If the seal on your mason jar contains plastic(which it probably does), be sure not to allow the acetone to contact it. One can also simply lay a piece of glass, wood, or metal on top of the jar to prevent evaporation. After 24 hours, place the coffee filter in the strainer, and pour the solution through the filter into the second jar. Squeeze the remaining acetone out of the leaf powder. Return the leaf to the first jar, add more acetone and let it sit for 24 more hours. Repeat the straining and add the second liquid to the first. Discard the leaf.

Pour the acetone solution into the glass baking dish and allow it to evaporate down to about 8 ounces of solution. Place the crushed leaf (which you had set aside 2 days ago) into the small evaporating dish and pour the remaining acetone solution onto it, being sure to scrape the sides of the baking dish. When this evaporates to the point that the leaf is just moist and no liquid remains, add a few tablespoons of acetone to the leaf and use the leaf to wipe off the resin which will have crusted to the side of your dish. As this is evaporating be sure to stir it often to prevent more resin from collecting in any certain area. When this is dry, you will be finished. Congratulations!

Our own assays of this extract process shows that it produces basically the same potency as standardized extracts of similar strengths, but it should be remembered that, unlike standardized extracts, the quality and potency of the end product is proportional to the quality and potency of the starting material.

I would like here to strongly discourage against giving extracts stronger than 5x to people who are inexperienced with salvia. Many people find the salvia experience quite disturbing and unpleasant. It is far better to give a person a weaker extract than to have to physically restrain them or piece them back together psychologically. Salvia also seems to have rather variable effects between people, some people being very susceptible and some not. So it is better to give a small amount at first in order to see how strongly it affects a person. I, for example, am quite content to take two hits of 5x, while my wife must take 5-6 in order to obtain the same effects. So, for her, a 15x extraction might be preferable, whereas it would probably scare the shit out of me(which it has on many an occasion). Just try to remember that if you are giving this to someone else, they are someone else. They are not you, and will not necessarily react as you do. Be responsible, otherwise this ancient tool will become illegal as so many others have.

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Salvia Extraction

Isopropanol or Reagent Grade Acetone

See also : [Water then Acetone Extraction](#)

See also : [Denatured Alcohol Extraction](#)

Either Isopropanol or reagent grade acetone:

1. Put leaves in glass beaker with reagent grade acetone for 3 days.
* Note the solvent turns green and leaf becomes paler.
2. Strain leaves out of acetone, pouring acetone into glass double boiler / beaker in hot waterbath.
3. Reserve spent leaves.
4. Boil acetone to evaporate as much solvent as possible.
5. Add small amount of spent salvia leaves to oily residue and stir leaves to remove residue from glass.
6. Remove leaf
7. Add more acetone to beaker/double boiler to redissolve oily residue clinging to glass.
8. Repeat evaporation procedure.
9. Add spent leaves to another volume of acetone and repeat steps 1-8 above.

Using 1 ounce dried salvia leaf and ~100 ml acetone, the yield was 2gm final dry 'super salvia'... This product should be used carefully, perhaps with a sitter because it is strongly entheogenic.

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Salvia Extraction

Denatured Alcohol

See also : [Water then Acetone Extraction](#)

See also : [Isopropanol or Reagent Grade Acetone](#)

Denatured Alcohol :

1. Take approximately 30 dried leaves and crush them by hand.
2. Put them in a mason jar soaking in 1/2 cup of denatured alcohol.
3. Let soak for 2 hours.
4. Decant (pour off) the alcohol into a small non-aluminum dish.
5. Add about 5 dried crushed leaves.
6. Set a fan to blow over the dish to speed the evaporation process.
7. Preheat oven to 250 degrees F.
8. Turn oven off and place dish inside the oven while it's still hot.
9. The small amount of water absorbed by the alcohol should dry within about 15 minutes.
10. Scrape all material from the dish with a razor blade (that's why you're not using an aluminum dish).
11. Smoke with care.

In this method, the denatured alcohol (pure ethanol with a small amount of methanol added) seems a good alternative solvent to acetone as Valdez reported using aqueous methanol as a polar solvent to extract nonpolar hexane extracts, increasing the concentrations of salvinorin-a before using chromatographic separation to obtain the purified compound.

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[Journal of Ethnopharmacology](#) Vol 7, 1983; 287-312
([Online Copy](#))

[A New Mexican Psychotropic Drug from the Mint Family](#), by R. Gordon Wasson

[Harvard University Botanical Museum Leaflets](#), submitted for publication October 24, 1962
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Cultivating Diviner's Sage

A step by step guide to cultivation, propagation, and keeping your Salvia plants happy

by Will Beifuss

[The Resonance Project](#)

Issue 1, Summer 1997

Salvia divinorum is a member of the mint family which also includes such familiar herbs as oregano and basil. There are dozens of Salvia species, but Salvia divinorum is the only one known to contain the psychoactive diterpenes salvinorin A (at 96%) and salvinorin B (at 4%). Salvia has hollow, square stems with winged edges. The stems are not very sturdy, but with support, the plant can grow to eight feet tall. Filtered sunlight is best, and the plant likes plenty of water and humidity. It rarely sets seed, and when it does the seeds are usually not viable. In the wild, the plant propagates by falling over and sending out roots where it touches the ground. In a high humidity environment, it is not uncommon to see roots forming on the stem even before the plant has fallen over. These root formations make cuttings an easy method of cultivation.

Cutting & Transplanting To take a cutting, first cut off a branch tip that has four to six sets of leaves on it with about four inches of stalk below that. Place the cutting in water so most of the bare stalk is covered - tap water is fine and you don't need to add any nutrients. The cutting may wilt for a day or two, but should recover nicely. Mist the cutting frequently or keep it in a high humidity environment to ease the shock of being cut. In summer wait until the evening to take cuttings to prevent excessive wilting.

In about one week nodes will appear on the stalk where the roots will eventually emerge. In another week the roots will appear and grow to a length of 1/4" to 3/4" long. This is the time to transplant the cutting into soil. Keeping the cutting in water beyond this point will deprive it of nutrients, and longer roots are more susceptible to damage during transplanting.

Transplant the cutting into a medium sized pot using either commercial potting soil or your own formula. I make a mixture of one part each compost, peat moss, sandy loam, and a half part perlite. Salvia divinorum likes a friable soil rich in humus and with good drainage, so avoid heavy soils with a lot of clay. The plant also likes a lot of root space, so re-pot often for maximum growth. When you see growth starting to slow down, or the plant looking ragged, it's probably time to re-pot.

Temperature & Seasons The ideal temperature is in the 60 to 70 degree range, but my plants have survived hot spells of 100 degrees and night time chills as low as 35 degrees. In hot weather make sure the plants have enough shade and plenty of water with frequent misting. In the summer I keep my plants on my deck and under 60% shade cloth. I have misters that come on six times a day for one minute, which is long enough to wet all the foliage. The misters are controlled by an electronic timer that screws onto my outside faucet.

The plants can put on four to five feet of growth during the six months they are outside. I have heard that the salvinorin A content is twice as high in the leaves during the summer, but this is anecdotal information. In the fall, growth slows as temperature and light levels decrease. If the temperature falls below freezing, the plant will immediately turn black and die. If the root ball has not frozen, the plant can grow back - often quite prolifically because it has a large root system supporting the new growth. I know it's time to bring my plants inside when the leaves start to blush red from the cold nights. This reaction will disappear after a few weeks of being indoors.

Flowering Plants will flower in the fall when there are about ten to twelve hours of light a day. If you are bringing your plants inside under artificial light, you can prevent flowering by increasing the light to fourteen to sixteen

hours a day. The plants will then go back to vegetative growth and put their energy into leaf production. I enjoy the flowers, so I keep my lights on for only twelve hours a day and let the plants go through their cycle. Each plant sends up a spike that can grow to be a foot in length, filled with many small bluish white flowers. The flowers have a very delicate, spicy scent.

Each flower spike will last about a month, but if you have many plants in different phases of flowering, the whole process can last two to three months. I know people who have grown *Salvia divinorum* for years without their plants ever flowering, even though the plants go through a period of shortened day length. The plants tend to get leggy during flowering, lose some of their lower leaves, and in general look a little ragged. Once flowering is over, start increasing the light cycle and the plants return to vegetative growth. Light can be increased to as much as eighteen hours a day for maximum growth. Anything beyond this can be detrimental to the plants.

Grow Lights I am not a big fan of the high priced fluorescent grow lights marketed under such names as Vita Lite, Agro Lite and GroLux. One of these bulbs costs about \$15. Five or six standard fluorescent bulbs can be purchased for this price and will do just as well. Fluorescent bulbs emit light predominantly in the blue spectrum which encourages leaf and stem growth, but are low in red light which promotes flower development. Unlike Cannabis, where the goal is flower production, the aim with *Salvia divinorum* is leaf production, so fluorescent lights are fine. Of course natural sunlight is best, but unless you have a greenhouse or a sunny location indoors, fluorescent bulbs will maintain your plants through the winter until you can get them back outside in the spring.

High Pressure Sodium (HPS) or Metal Halide (MH) lights can also be used. They come in 400w and 1000w sizes. Unless you have a large area to cover, the 400w is plenty. A 400w MH system costs about \$200 and puts out as many lumens as twenty fluorescent bulbs. This fixture would provide enough light for an eight by eight foot growing space. However, you need to be careful to keep the light at least two feet above the tops of the plants. If the leaves start to blush red, then the light is too close. Leaves will lighten in color when exposed to high light levels; this is fine and does not affect potency. If you do use one of these lights, your plants will require more humidity as the extra heat the lights give off will quickly dry out the leaves. HPS lights are higher in the red spectrum and emit a golden light, MH lights are more balanced and are usually better for use with *Salvia divinorum*.

Humidity One fallacy often heard about *Salvia divinorum* is that they need a lot of humidity to survive. In fact the plants do enjoy high humidity, and will achieve optimum growth if grown in these conditions, but they can be grown successfully in a low humidity environment with a few simple steps.

The trick is to slowly acclimate the plant to a lower humidity environment over the course of several weeks. If you have ordered a cutting by mail, chances are good it came from a high humidity environment in a greenhouse. Give it high humidity initially by misting it often or placing it in a tent with a humidifier, but slowly reduce the humidity over the course of the next month. The plant will do just fine, and will be much less hassle for you. In the winter when my plants are indoors, I cover the walls with plastic sheeting and spray the plants three times a day with a pump-style tank sprayer. This takes less than fifteen minutes a day and I never have a problem with leaf edges turning brown - the typical sign that the humidity is too low.

If you are going to grow your plants in a high humidity environment, don't make the mistake of thinking that you don't need to water them much. They still require regular watering even with humidity levels in the 90% range. I do not like using tightly sealed tents or other grow chambers, these do not allow for a healthy flow of air and such stagnant conditions encourage the growth of molds and bacteria.

Pests & Prevention The most common pests of *Salvia divinorum* are whiteflies and aphids. Both of these insects live on the underside of leaves, preferring the new growth on the top half of the plant. Aphids will also cluster on the stems. Whiteflies are small insects with bright white wings. Their pupa are light green and look like small grains of rice. All stages suck on plant juices, and heavily infested plants will yellow and grow poorly. If the infestation is left unchecked, the plants can die from a black sooty mold that grows on the honeydew that the whiteflies and aphids produce.

I have had good results combatting whitefly (and to a lesser degree aphids) simply by spraying the underside of the leaves with a solution of one teaspoon liquid castile soap to one quart water. The soap breaks down the insects' protective coating and causes them to drown. The plants can be rinsed off the following day with clean water. You will want to repeat this procedure once a week for a couple of weeks to kill any pupa that survive the initial spraying and grow into adults.

Aphids are a little more resistant to a simple castile soap spray, so I recommend using insecticidal soap on them. These soaps contain salts of fatty acids and are quite safe to use, even within days of harvest. The directions say the soap can be left on, but I wash the leaves off the following day after application just to be safe.

There are some biological controls that work wonderfully. The parasitic wasp *Encarsia formosa* is very effective against whitefly. These tiny wasps are barely visible to the eye. They lay their eggs inside developing whitefly pupa, so one of their young hatches out instead of the whitefly. For aphids, try ladybugs or *Aphidoletes aphidimyza* (see source on page 35 for these).

I fertilize my plants about once a month with fish emulsion when they are outdoors in the summer. In the winter I use Stern's Miracid as *Salvia divinorum* likes acidic soil. Feeding a lot of nitrogen to your plants will attract more problem insects to them, so cut back on fertilizing as part of the strategy to bring pests under control. lifespan.

For all practical purposes, the lifespan of a *Salvia divinorum* plant is about five to six years. The plants get woody as they age, growth slows, and they become more brittle and start to fall apart. If they have been staked and prevented from falling over and rerooting, then it is time to take some cuttings and start again. Cuttings from an old plant will show the same vigor as cuttings from a younger plant.

Preparing the Leaves *Salvia divinorum* leaves should be dried in a food dehydrator on a medium high setting (130-140 degrees). At this temperature, drying will take between one to two hours depending on the size of the leaves. I remove the mid ribs on the large leaves and they never take more than one hour to dry. Drying at lower temperatures causes the leaves to lose their green color and turn brown. The leaves are 90% water, so ten grams of fresh leaves equals one gram of dried material. It takes a lot of fresh leaves to produce one ounce of dried leaves; a gallon size plastic bag stuffed full with leaves weighs only two ounces.

Once dry, I push the leaves through a sieve to powder them, then pack the powder tightly into glass vials and store in the freezer. The potency of salvinorin A will be retained for many years this way. Fresh leaves can be stored in the refrigerator for a few days before losing potency, but be sure to keep them in a plastic bag with a damp paper towel. Freezing fresh leaves does not work, as when thawed they turn into a slimy mess. Leaves can be juiced using a wheat grass juicer and then frozen for long term storage. When thawed, the juice is held in the mouth as is done with the fresh leaves. Dried leaves can be reconstituted by soaking in a small amount of water and then chewed.

Since *Salvia divinorum* is one of the rarest of all plant entheogens, it is my hope that many people will choose to cultivate this plant. It was almost driven into extinction once, so let's work to preserve this valuable plant ally for future generations to enjoy.

Salvia Resources Allies
(Formerly ... of the jungle.)
P.O. Box 2422
Sebastopol, CA 95473
\$2 Catalog (Deductible from your first order.)

The Basement Shaman
P.O. Box 1255
Elgin, IL 60121
847-695-2447
bshaman@interaccess.com
\$2 Catalog

BPC
P.O. Box 1368
Sebastopol, CA 95473
\$2 Catalog

Companion Plants
7247 N. Coolville Ridge Rd.
Athens, OH 45701
614-592-4643
http://www.frognet.net/companion_plants/

\$3 Catalog

Entheogenesis
P.O. Box 1220
Winters, CA 95694 \$3 Catalog

Herbal-Shaman
P.O. Box 8892
Wichita, KS 67208
316-682-5206
E-mail: shaman@herbal-shaman.com
<http://www.herbal-shaman.com>
Free Catalog

Herben Shaman
920-699-5650
E-mail: herben_shaman@usa.net
<http://mj-millennium.org/herben-shaman/>

Horus Botanicals
HCR 82 Box 29
Salem, AR 72576
\$3 Catalog

Ho Ti Products
P.O. Box 679
Honaunau, HI 96726
hoti@ilhawaii.net
<http://www.ilhawaii.net:80/~hoti>

JLF
P.O. Box 184
Elizabethtown, IN 47232
812-379-2508
\$2 Catalog

Kava Kauai
6817 Kahuna Rd.
Kapaa, HI 96746
800-626-0883
kava@kauaisource.com
<http://www.kauaisource.com>
Free Catalog

LER (Legendary Ethnobotanical Resources)
16245 SW 304th Street
Leisure City, FL 33033
305-242-0877
info@ethnobotany.com
<http://www.ethnobotany.com>
\$3 Catalog

Logee's Greenhouses
141 North St.
Danielson, CT 06239-1939
860-774-8038
\$3 Catalog (Deductible from first order)

Magic
395 Oak Creek, Suite 508

Wheeling, IL 60090

\$1 Catalog

Native Habitat

P.O. Box 644023

Vero Beach, FL 32964

E-mail: NHE@juno.com

\$1 Catalog

P.J.T. Botanicals

P.O. Box 49

Bridgewater, MA 02324

\$3 Catalog

Redwood City Seed Co.

P.O. Box 361

Redwood City, CA 94064

415-325-SEED

<http://www.batnet.com/rwc-seed/>

\$1 Catalog

Theatrum Botanicum

P.O. Box 288

Navarro, CA 95463

thebot@pacific.net

<http://www.greenstranger.com/>

Well-Sweep Herb Farm

317 Mt. Bethel Road

Port Murray, NJ 07865

908-852-5390

\$2 Catalog

Biological Controls Nature's Control P. O. Box 35 Medford, OR 97501 541-899-8318 \$0.50 Catalog Encarsia formosa (whitefly parasite) Aphidoletes aphidimyza (aphid predator) Yellow Sticky Traps (whitefly control)

Author's Note Logee's Greenhouses and Well-Sweep Herb Farm have the cheapest prices on Salvia divinorum plants. Companion Plants has the cheapest prices on dried Salvia divinorum leaves. Herbal-Shaman is the only source for Salvia divinorum Extract. The Basement Shaman is the only source for fresh Salvia divinorum leaves. If you are in the market for dried Salvia leaves, I recommend Kava Kauai or Herbal-Shaman as their products are excellent. I can also highly recommend the extract sold by Herbal-Shaman.

This information was reprinted from the Psychedelic Sourcebook, a resource guide to the businesses of the psychedelic community. The Sourcebook has listings for books, tapes, spores, botanicals, magazines, organizations, internet sites and more. Order from: Rosetta, Dept. TRP, P.O. Box 4611, Berkeley, CA 94704-0611. \$12.95 + \$2 S&H. Rosetta catalog included free.

Will Beifuss is the author of the Psychedelic Sourcebook, a resource guide to businesses of interest to the psychedelic community. Will makes his home in the cloud forests of the Pacific Northwest, and is an avid Salvia divinorum grower. His new book entitled Archetypes and Altered States is due out later this year.

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Hydroponic Cultivation of Salvia Divinorum

[Alex Avriette](#)

I am currently growing salvia hydroponically. my setup is as follows:

3:1 perlite:vermiculite

Miracle Grow Patio (20-20-20) fertilizer, 1/2tsp per Gallon

24/0 light:dark, with 2x 48" flourescent soft white bulbs.

the smallest air pump whisper makes, with two "air stones," about 6" long each, airating the water.

the cutting is residing in a gallon water bottle with holes through the bottom for draining/irrigation. the bottle is in a large (2'x3'x8") tub, with about 1.5" of water/fertilizer in the bottom.

total cost of setup:

tub - \$5 at Wal-Mart

Fertilizer - \$3 at Home Depot

Shop Light (with bulbs) - \$10 at Home Depot

Vermiculite 8qt - \$3 at Home Depot

Perlite 8qt - \$3 at Home Depot

Water Jug (as if you didnt have one) - \$.87 at Vons

Salvia cutting - I cut it from other plants which were givent to me by a friend

total cost: \$26.

power consumption is probably less than 40W.

I will keep results posted to the list. The plant looks super happy, and its only been in the perlite for 1 day! :) :)

Danke,
alex

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Harvesting Salvia divinorum

by Disembodied Eyes

I use two methods of harvesting, picking and cutting. Picking is just that: carefully pinching off a percentage of the larger leaves. They grow back double, though smaller. When pinching, pinch at the base but don't take the meristematic tissue on the sides--that's where the new leaves come from.

Cutting, trimming. When the plants get big. I generally cut just above a node. The stem above the node is going to dry up anyway, you don't want the hollow stem to fill with water and rot. Any place you cut, new branches will sprout.

Harvesting is a good time to start new slips. Say you cut off a four foot section of stem. Break off the top eight to twelve inches or so, pinch off all but the small leaves near the top, and drop it into a glass of water. If there are four or five such slips in one glass, they seem to stimulate each others root growth. When the rootlets bud out, you can pot them. I never use rooting compound anymore, though there is no reason not to.

You can also start the mid-sections of stem--it doesn't have to be the top. A couple of such exponential cycles are you'll be well-endowed.

If you are in an arid climate, or have access to such, drying the leaves is easy. Salvinorin is remarkably stable. However, dried leaf is not quite like fresh. The fresh leaves you can ingest. Dried, smoke. Somewhat analogous to dmt/ayahuasca. (discounting the harmine effects...).

good luck.

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A Breakthrough into the Raging Space of History

Salvia

by [Navi](#)

DOSE :

2 leaves

smoked

Salvia divinorum

(fresh)

 Author
URL

I have been growing two salvia plants for a few weeks now. [Props out to my righteous benefactor, who will remain nameless for reasons of National Security.] I could have tried some leaves before this, but I felt that I needed to 'earn' the experience by cultivating and caring for the plant myself. Last week I tried a single leaf, to introduce myself. It was just a threshold dose, but I sensed the power that lay in these leaves. This time I had 'primed the pump' with another, less exotic green ally before raising the bowl of salvia to my lips.

After the first leaf, there is a growing sense of anticipation, a feeling that something is very much about to happen. This is a deep somatic response, not merely the result of my hopes or expectations. Intrigued, I inhale most of a second leaf. Then I lie down in darkness.

Breathing in, I know I am breathing in. Breathing out, I know that I am breathing out. There is only this breath, in darkness. What else can I be said to be? What else is life on earth but a quiet and majestic rhythm beating in the vacuum? But I am breathing. Now. And something is happening...

Something is trying to be remembered. Something is unfolding itself from this moment. I sit up, concentrating. Petals of thought are spreading out around me. Half-formed words tug at my awareness, as if birds were plucking straw from my scarecrow body. I feel a Fact slowly washing through me that is basic, simple, important -- something 'my grandfathers' knew about. (This is the phrase which comes to me.) I am breathing, trying to focus on what is happening NOW. I am breathing, I am breathing, I am...

I am something unspeakably old. It is enormous, ongoing, renewed in every moment. Have I always been this nexus of perceptions, bursting back through the membrane of birth, arching across millennia to my root in the earth? I am the center and the boundary of all things. I push the trunk of my being up through the ages, unshakeable, flowers at the tip of each branch waving and winking like tiny eyes in the breeze of eons. It is me, has always been me, and yet, compared to how I see myself from day to day, this is unaccountably alien.

There is a word for this, if I could only remember. I see it shifting in the periphery of my attention, slipping away like a silver minnow when I look right at it. Or, like the corner of words, incomplete of themselves, unpronounceable when joined together: it is slippery, at the tip of my tongue.

I find myself thinking of my grandfather, a man I did not know very well, but whose memory has been passed to me through my father and my grandmother. The archetypal image I have of him is of wisdom, humanity, and passionate conviction. He was a scientist, doing cancer research, and the motto of his laboratory was 'For the Dignity of Man.' Though he was not my biological ancestor, with the Leaves in me I feel that I am the descendant of his Idea. I am his onmoving force through Nature. And by extension this is the force of a much larger, older momentum, working through this man and now through me. Suggestions of destiny, of a breakthrough into the raging space of history...

The Presence leaves me after about 20 or 30 minutes. The focus dissipates, and I am left wondering at the implications of this strange encounter. Throughout I had remained surprisingly dispassionate. There was no fear, no particular awe, though some remote part of me responded to the strangeness of the experience. It is only afterwards, patching language onto it, that I am forced to break it down and draw lines through it, losing myself in contemplation of it. You who are familiar with these things understand this: it as I have described, and yet not like that at all. We do the best we can.

New York City, July 1997

Exp Year: 1997

ID: 2138

Added: Jun 26, 2000

Views:
18724

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Switching Realities

Salvia

by Anonymous

DOSE :

2 hits

smoked

Salvia

This was my first time, and I guess I was lucky, because it was amazing. I was a bit chicken, after reading some reports of it being more powerful than 5 grams of mushrooms and that sort of thing, so for my first time I only used about half of a bowl. I prepared a bed, lined with about 10 pillows, so I was definitely comfortable. I had no lights on, and had Peter Gabriel's Passion Sources album playing softly.

I first took a small hit, and then a large one which I held for a long time. The first thing to happen was for my vision (I could still see a little, from a small digital clock in the room) to just spin out of control, into a tunnel. I got a bit nervous, reaching for the light. With the light on, I felt a little strange, but no visual activity, so I mustered up some courage, shut off the music and shut it back out. I layed back and relaxed.

What happened was wonderful. At first I kept switching realities. This is something that has been happening to me at random lately, even when not on anything, but not like this. Usually I just feel like I was just somewhere else, and I have a thought in my head that I FEEL has something to do with where I just was. (I know that sounds strange) But I very rarely get even a whole distinct thought. Well with the salvia, I was completly somewhere and someone else. I lived a complete life, had a complete memory of this life, and was just putting something on a shelf when I snapped back here to who I am. This sort of thing happened about three times. In one of them, the only thing I was aware of was that someone had just let out a blood curdling scream. I was back here instantly, although I was scared that someone in my house had just heard that scream, but luckily it wasn't me screaming.

After this I just enjoyed some morphing color patches. They were not very bright, but very beautiful. Then the plant starting to talk with me. It was definatly female. I felt as if my mother was holding me as an infant, but unlike my mother- - This was somehow more comforting. I felt better than I have ever felt in a trip. I felt more comfortable than with opium if you can believe it. I talked with the plant for about a half an hour. The effects wore off, and I just layed there astonished for about 2 hours. I just sat up and started typing at 3am.

Greatest plant experience of my life. The plant was very intelligent, Some of the things discussed were intensely personal, and some were the plant's own feelings, which is something I have never experienced. I am sorry I am so blunt about just bluting this thing out, without all that much explanation or analysis, but I am just blown away.

Exp Year:

ID: 2139

Added: Jun 26, 2000

Views:
17588

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A Total Mind/Body Trip

Salvia Extract
by Elfstone

DOSE :		smoked	Salvia	(extract)

I took approximately 30 dried leaves of *Salvia divinorum*, crushed them by hand, placed them in a mason jar, and soaked them in about 1/2 cup of denatured alcohol. I let this soak for about 2 hours, then decanted the alcohol into a small rectangular dish, added about 5 crushed leaves, and then set a small fan to speed the evaporation process. Since alcohol will absorb a small amount of water, the last bit of moisture was driven off by preheating the oven to 250 F, turning it off and placing the dish within, completely drying the extract in about 15 minutes. I scraped all material from the dish with a razor blade.

I made this extract to allow my good friend A. the chance to experience Salvia with the advent of the new year. Prior to attempting this method, I had always used acetone as the solvent, with fairly good result. The denatured alcohol (pure ethanol with a small amount of methanol added) seemed a good alternative solvent as Valdez reported using aqueous methanol as a polar solvent to extract nonpolar hexane extracts, increasing the concentrations of salvinorin-a before using chromatographic separation to obtain the purified compound.

My wife, Evenstar, and I arrived at our friends' home, being received by him and his wife, A. & B. After exchanging amenities and becoming comfortable, we proceeded to weigh whether he would like to try DMT or Salvia. He had a slight cold and thought he'd go with the milder trip, opting for the Salvia. I placed about 1/2 teaspoon of the concentrated form in a small pipe, telling him he had to take at all in, in several huge inhalations, while my wife recommended that he put a pillow on the floor so he could lay down afterwards and really get into it. He fired up the pipe, finishing it in two inhalations, and lay down on the floor, becoming very quiet.

Star, being an experienced Salvia journeyer, shared her observations on the state with us while A. remained very quiet on the floor. However, he soon attempted to sit up and looking at his expression, it was quite clear that he was having an overwhelming experience. About 4 minutes had passed and he was still deep into it. In his attempts to sit up I could discern disorientation, and something I had never seen in my friends face before, fear! We are all very experienced trippers, A. & I having begun over 25 years ago, and seeing his expression of fear I was both amused and a little alarmed. I went by his side and told him it would pass. He sort of crawled away from his resting spot and mumbled that he would like it to end now. His wife came nearby and comforted him. After a few more minutes had passed, I suggested that he try to articulate the experience to help himself come back and he said, 'Does crocodiles and bananas make any sense?' The three of us found ourselves laughing heartily at the intensity of my friend's experience. We were all very surprised and amused to see his bewildered reaction. As he finally began to come back he was able to provide us a very interesting account of his experience. He stated that there was also the distinct perception that this was all a big joke and that we were all in on it except for him. He was especially sure that Evenstar was the engineer of the whole thing.

He said that after taking the last hit and laying down, that was the last thing he remembered for awhile: It was just like being hit over the head with a baseball bat. As awareness resurfaced, he would perceive the room,

but no sooner did he perceive it than he was rolled under again, becoming one with the totality of the cosmos. He would then roll back into the room again and see us briefly, knowing that he was about to be rolled right back under, and was fearful that this process was never going to end. He said the image that came to mind was being rolled up in straw mats, becoming one with the mat, with no differentiation between self/other. At one point, when he sat up and rested his hands on the carpet, he perceived himself as resting his hands on an ocean of fish, packed very tightly. As he rolled back into the room, he would perceive the floor as being about chest high, with only his upper torso and head emerging briefly, followed by becoming totally dissolved back into the ground. As he was comforted by his wife, he was concerned that he would take her under with him when the next roll came around. Thus in the intensity of the experience it was a total body/mind trip, with no ability to distinguish this as merely an altered state of consciousness. This was the most powerful psychedelic experience my friend had ever had, bar none! He said, 'It's right up there with birth and death!'

Star was so impressed with the intensity of my friend's experience that she opted to try it before the night was out. She insists that the Salvia trip is one of the big ones of her life, right up there with the mushroom, bigger than DMT. When Star does Salvia she usually leans back on the couch and laughs and laughs until it is over, really enjoying the ride. She has a wonderful capacity to let go and flow with the experience. The first time it hit her she laughed and exclaimed, 'God Bless that little plant!' She took two small hits from the pipe and leaned back on the couch, launching into her usual laughter. However, when she would come back into the room, I noted a look of absolutely amazed astonishment on her that I had not seen before. Her reaction to the denatured alcohol extract was quite extraordinary, noting that it was very smooth and easy to smoke, and also the most powerful one to date. As she came out of the experience, Star would look at A. and exclaim, 'Pobrecito A.!' (poor little one!).

The experience was so incredible that my friend opted to postpone the DMT until another day. Having done both, Star puts DMT more on the level of the mushroom, and Salvia in a unique class of its own; the Salvia being much more powerful! So, if anyone has not had the Leaves of the Shepherdess grab ahold of them yet, I would suggest using denatured alcohol as the solvent, concentrating say 30 leaves down onto about 5, and then boldly proceeding, but also with circumspection: be sure to have a sitter watching over you!

Exp Year: 1996

ID: 2140

Added: Jun 26, 2000

Views:
18810

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Visiting Other Dimensions

Salvia
by Anonymous

DOSE :

smoked

Salvia

I've now used Salvia twice. Both times I've had a sensation of external pressure against my body, coming from a discernable direction. Both times also I've had some experience of what could be thought of as visuals, but are really much more like visually-interpreted perception in other dimensions. The second time, I had a mini-vision of rushing past several windows in a structure like a greenhouse, accompanied by a REALLY strong sense that I was near something forgotten, yet familiar, and intensely powerful. I struggled, perhaps too hard, to grasp what it was, but it has as yet eluded me.

This is the strangest of substances! I also had the terrific experience of synaesthesia with music, something I've never experienced on another compound. After I smoked my first couple of bowls this last time, I closed my eyes and let the music work on me (this was some beat-oriented ambient groove by William Orbit). I was presented with gently waving bands and waves which swayed with the beat, and vegetable visions where leaves and stems appeared and built upon each other in time with the development of the music.

Grass grew from the backs of my hands, at least it felt like that. Both times I've felt the feeling-tone of my tactile sphere change from whatever normal is to something that tasted-felt sort of orange and green. I get a slight disorientation, some loss of balance and coordination, and the feeling that my body is extended into these wierd dimensions that I can *see* in my mind's eye but which are not part of our normal milieu.

That night, as I lay down to sleep, I was startled and fascinated by brilliant flashes of light and a sense of rushing, rushing behind my eyelids. It didn't keep me from sleeping, or evoke any profound dreams, but it sure was interesting. Several times there was the feeling of perceiving a sort of shimmering barrier or screen between myself and the imaginal realm that I had briefly visited, and this was hours after the actual experience.

It's most interesting with Salvia that I have fairly strong perceptual experiences that are not visual, and that do not indeed seem to relate well to ANY of my normal senses. A person who also partook with us during this last smoking said he felt that Salvia wanted him (and this is my paraphrasing) to turn from the reality-perceptual-tunnel through which he normally looked and see these OTHER things within the Salvia realm.

Exp Year:

ID: 2141

Added: Jun 26, 2000

Views:
14178

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Use a Sitter!

Salvia

by Andy Weisner

DOSE :

smoked

Salvia

Yesterday the mighty Salvia crossed my ways the first time and I have to reckon that this was one of the weirdest experiences in my life. I....well I do not remember what happened the first few seconds. I found myself in the same room but it was quite weird. There was some kind of force field not unlike gravitation pulling me strongly in a certain direction. I felt like this field was forcing me to go to its source which was not inside the room but outside. This forcing felt quite uncomfortable, and I felt kind of possessed by something. This sensation was so strong physically and mentally that by this time I actually forgot that it was caused by smoking the salvia, I actually forgot why I was there. The room was in the second floor of the house and I was lucky I did not take the direct way outside-out the window but went the stairs down. On the way down I noticed that the environment looked a bit trippy but not distorted,(like the coming down of a low dose shrooms, acid or 2CB) and I remembered that I smoked the salvia. But the forcefield was still pulling strong and I got a bit desperate. I went into the room in the first floor where my girlfriend was sleeping and tried to wake her up to help me but was not very successful.

At this time I saw the force field like some sort of sparkling psychic plasma which covered me and starting crawling and covering everything I touched. The look of the transparent plasma I saw is very hard to describe. It made me and everything I touched a bit sparkling and different and at one time it seemed like another reality trying to slide over the usual reality. I was a bit afraid to get my girlfriend also trapped in this field and so I left the room and closed the door and followed the force and went down the second staircase. At this point I felt quite sober and clear mentally but the force field was still there pulling on me but now I tried to oppose it with my will and this sort of worked but was very difficult. At this point another friend who lived there just came in and looking at me he asked if I was felling well. I said 'Yes. . but I don't wanna follow this. . (force)' and than I realized that he was not feeling it and I was the only one. I felt embarassed as a experienced psychonaut to be in a situation like this but I was happy not to be alone. I now had the sensation that the forcefield is getting weaker and it was easier to control it. I told him that I have smoked a new plant and that it is unlike anything I had before and very strong but I could handle it.

After a while the sensation slowly dissapeared completly and I felt only the familiar MJ buzz. The whole experience lasted not more that 3-5 minutes and I was very happy to be down again but quite shaken. I promised to treat Salvia next time with more respect. This experience was very different from any trip before, I had never had similar sensations before, not even from heroic harmala+shroom or K+2cb+Acid trips. The feeling of being manipulated against my will was especially scary and had never happened before, and there no Ego dissolution like usually with strong trips, I was quite lucid. The only analogy I found for the gravity like force field sensation is a strong underwater current when swimming or ,blame it on my love of Science Fiction, the tractor rays which aliens use to abduct people in UFOs. I would recommend to use Salvia with great respect and only in safe environments. While I feel that with most other entheogens I personally don't really need a sitter I would recommend it with Salvia. I'm a person who has a strong will and still lost control for a while, and from what I read this sort of experience is not unnccommon with Salvia.

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