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**ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES  
VOLUME VIII**

**REPRINTS**

**The Occurrence, Use and Detection of Psilocine, Psilocybine and  
Baeocystine in *Psilocybe villarrealiae* from Xalapa, Veracruz, Mexico**

By John W. Allen, Jochen Gartz, Prakitsin Sihanonth, and Fulvio Castillo Suarez



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## TABLE OF CONTENTS

<b>Sex, Mushrooms, and Rock and Roll.....</b>	<b>1</b>
John W. Allen.	
<b>The Occurrence, Use and Detection of Psilocine, Psilocybine and Baeocystine in <i>Psilocybe villarrealiae</i> from Xalapa, Veracruz, Mexico.....</b>	<b>67</b>
John W. Allen, Jochen Gartz, Prakitsin Sihanonth and Fulvio Castillo Suarez.	
<b>The Occurrence, Recreational Use, Cultivation, and Chemistry of <i>Psilocybe ovoideocystidiata</i>, a new Bluing Species (Agaricales) from Ohio, Pennsylvania and West Virginia.....</b>	<b>75</b>
John W. Allen, Jochen Gartz, Prakitsin Sihanonth and Dan Molter.	
<b>Cosmic Orgasmic Graphic Design.....</b>	<b>87</b>
John W. Allen and Adisron Junlawanno.	
<b>Acknowledgments.....</b>	<b>87</b>
<b><i>Teonanácatl</i>: A Bibliography of Entheogenic Fungi: The New Revised Edition.....</b>	<b>87</b>
John W. Allen and Jochen Gartz, Ph.D.	
<b>Ying and Yang Graphic Shroom Art Page (Several Images).....</b>	<b>88</b>

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Full Moon Mushroom Dream Festival on Koh Phangan, Thailand.

**The Occurrence, Use and Detection of Psilocine,  
Psilocybine and Baeocystine in *Psilocybe villarrealiae*  
from Xalapa, Veracruz, Mexico**

By

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## Abstract

In 1998, Guzmán reported, “11 species of *Psilocybe* from the state of Jalisco of which 55 are now recognized from Mexico.” In his paper, Guzmán described two new species, thus describing a total of 8 neurotropic *Psilocybes* from the State of Jalisco. Small collections of *Psilocybe villarrealiae* were harvested by one of the authors (FCS) in Jalisco for herbarium deposit. Chemical analysis of the collected species was performed; including a scanning electron micrograph of basidiospores of *Psilocybe villarrealiae* is presented along with a photograph of the species analyzed in this study. Additionally, this species is now being cultivated in America for recreational use. This is the first report of the chemical analysis of *Psilocybe villarrealiae*, new reported locations and the recreational use and cultivation of this species.

**KEYWORDS:** *Psilocybe villarrealiae*, Mexico, psilocine, psilocybine, baeocystine, recreational use, ludible cultivation.

## 1.1 Introduction

In the past several years, a newly recognized species of psilocybian fungi, *Psilocybe villarrealiae* is now a popular species used for ludible purposes by young adults in Mexico and by vacationing back packers who have learned of its existence and neurotropic properties from several online Internet mushroom websites.

Between the summers of 2004-2006, one of the authors of this paper (FCS.) photographed and collected neurotropic fungi in the Mexican State of Jalisco. These consisted of several small collections believed to be those of *Psilocybe villarrealiae*. Later, Guzmán reported these mushrooms specimens as a mixed collection allegedly comprising three species; *P. villarrealiae*, *P. Laurrae* and *P. zapotecorum*. According to Guzmán, the freshly collected dried specimens were difficult to separate and identify. Specimens of one species, *Psilocybe villarrealiae* were studied by the authors and the chemical results of its analysis and subsequent ludible recreational use and cultivation are presented below.

## 2.1 Methods and Materials

While visiting the woods of the west coast of Jalisco in September 2005, an unidentified species was later identified by Guzmán (2006, Pers. Comm., to FCS) as, *P. villarrealiae*, which has been placed in section *Cordisporae* of the genus *Psilocybe*. The mushrooms were found in the region of Jalisco after one of the authors had researched a paper published by Guzman (1998). The first search for neurotropic species in Jalisco by (FCS) was only successful in a small

harvested collection of 7 fresh mushrooms that appeared to be *P. villarrealiae*.

Immediately, expectations regarding the discovery of these specimens were heightened immensely so they were forwarded to Guzmán for study and taxonomic identification.

## 2.2 Description of *P. villarrealiae* Guzmán sp. nov.

**Cap:** 40-50 mm long, convex and plane, hygrophanous and ochraceous with some bluing along the edges of the cap.

**Gills:** Adnate to subsinuate, and somewhat violate in color at the margin of the gills.

**Stipe:** 50-60 x 4-7 mm. Yellowish-brown with white fibrils from the center to the bottom of the stipe. Bluing when damaged.

**Spore color:** violet to chocolate brown.

## 2.3 Habitat of *P. villarrealiae* in Jalisco:

In the Mexican State of Jalisco, there have been many individual collections of neurotropic mushrooms, many that have recently been identified in the genus *Psilocybe*, while at the same time, it is probable that more species might possibly be discovered in the same region and habitats as those recent specimens as first noted and reported by Guzmán (1998)

The influence of many new, as well as old ecosystems and microclimates are important for the distribution of these species. Riparian forests extend from sea level to about 2800 m elevation, with species of *Populus* predominating in arid and semi-arid regions of northern

## ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES VOLUME VIII

Mexico and species of *Alnus* in more temperate zones with cooler climates.

*P. villarrealiae* is a big mushroom, preferring to grow near rivers and along river creeks with vegetation classified as clod. Subtropical forests appear to be a natural humid habitat for these species, as well as are open spaces and under bushes. Sometimes, large collections of this species can be observed near *Magnolia* spp, and *Alnus* spp., where wood debris is buried and mixed with muddy soil, red soil, in pine forest mixed with oaks, and in subtropical forests near small creeks.

### 2.4 Distribution of *P. villarrealiae* in Jalisco:

It has a logistic distribution in Jalisco and can be found in abundance in and around the towns of San Sebastian del Oeste, Mascota, and Zapopan. *P. villarrealiae* also occurs in many other regions of Jalisco such as in Sierra de Quila.



Fig. 1. *Psilocybe villarrealiae*. Jalisco, Mexico. Photo: Courtesy of Cactu.

<sup>2.5</sup>**Season:** Generally, rainy season occurs in certain parts of Mexico from June through September. However, we report that sometimes the mushrooms appear as early as May and continue to fruit until October (Guzmán, 1983).

*P. villarrealiae* acts as a second decomposer, growing from sawdust, which we were able to observe in the town of Mascota, and we also found it to be growing out doors as well.

*P. villarrealiae* is one of the earliest neurotropic mushrooms to appear in Jalisco and also the last to find. It apparently has a really long flowering season. It is also one of the biggest of *Psilocybe* species to be found in the region.

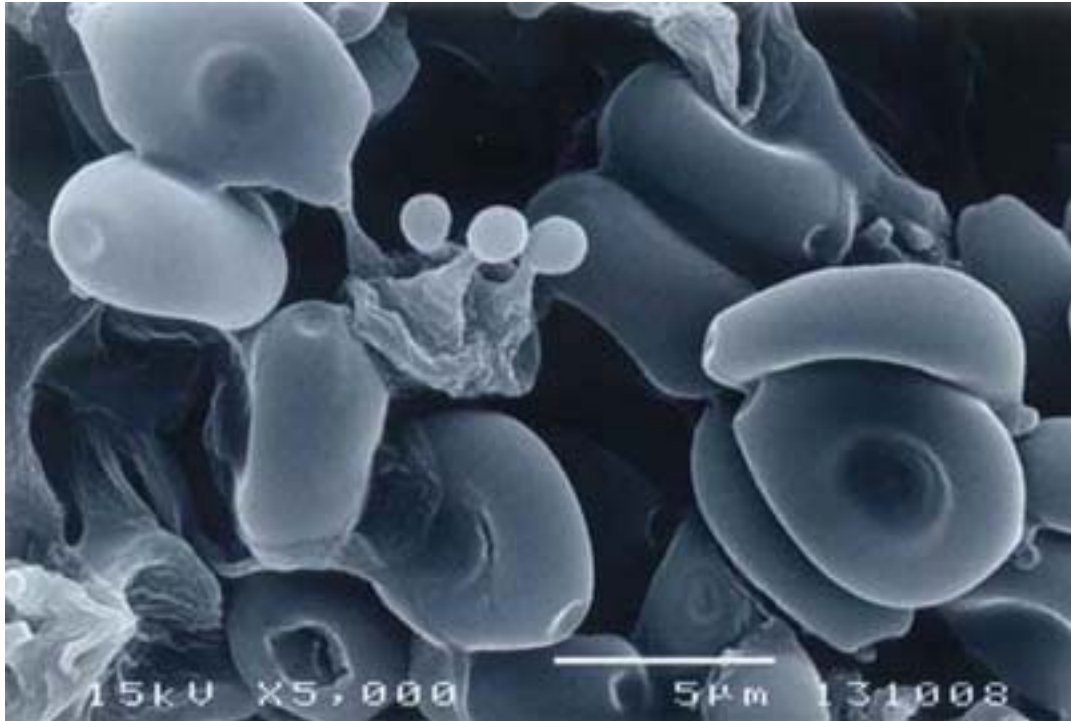


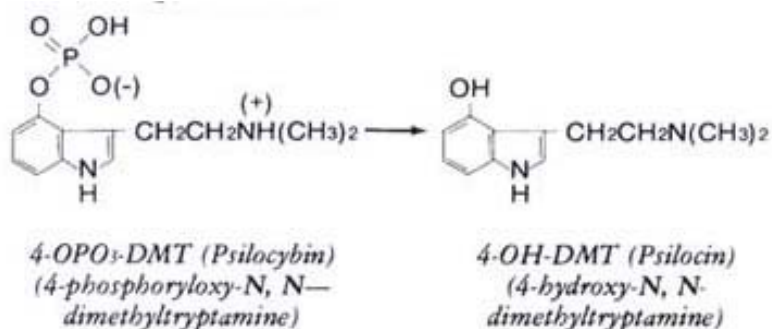
Fig. 2. Scanning electron micrograph showing various stages of basidiospores production of *Psilocybe villarrealiae*: Photo: P. Sihanonth.



Fig. 3. Scanning electron micrograph of basidiospores of *Psilocybe villarrealiae*.  
Photo: P. Sihanonth.



**ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES  
VOLUME VIII**



**3.1 RESULTS**

At first, the chemical analysis of *P. villarrealiae* revealed – only traces (under 0.03%) psilocybine and 0.2% tryptophan and no other indoles were detected.

**Chemical Results of *Psilocybe villarrealiae*.**

Mushroom	weight	psilocybin	psilocin	baeocystin (dry weight)
1	0.32g	0.42	0.11	0.05
2	0.41	0.53	0.08	0.04
3	0.54	0.35	0.07	0.03
4	0.67	0.28	0.07	0.03
5	0.82	0.26	0.06	0.02

**Table 1.** As shown above, there is a tendency for the mushrooms to have higher concentrations of the alkaloids in smaller mushrooms. Also similar concentrations have been shown in *P. cubensis* and other subtropical and tropical mushroom species and they are not so spectacular.



**Fig. 1.** *Psilocybe villarrealiae*. Jalisco, Mexico. Photo Courtesy of Cactu.

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VOLUME VIII**

**3.2 Herbarium Deposits:**

Mexico- Specimens described or discussed in this study were deposited in the herbarium of the Instituto de Ecología in Xalapa, Veracruz in September, 2004, July, 2005, and August, 2006.

Deposits for the chemical study and SEM photography were deposited in:

**Germany - University of Leipzig:**

*P. villarrealiae* 0008-17-2006

**Chulalongkorn University in Bangkok:**

*P. villarrealiae* 0008-17-2006

The numbers of the deposits at the Instituto de Ecología are different than those of the specimens deposited in both the herbariums at the at Chulalongkorn University in Bangkok and at the University in Leipzig, Germany due to a separate collection sent to one of the authors (JWA) of this paper who split the collection into two collections for deposit at Chula and at Leipzig.

**Holotipo:** México, Jalisco, Municipio de San Sebastián del Oeste, Camino San Sebastián del Oeste at La Bufa, 5 km de San Sebastián del Oeste, alt. 1300 m, 12.VII. 1997, G. Guzmán 32009 (XAL) (Isotipo en IBUG).

**4.1 Discussion:**

As noted above, the first 7 specimens of *P. villarrealiae* were forwarded by one of the authors (FCS) to Guzmán, being the person most qualified to do the taxonomic study of this species. According to Guzmán, the collections were mixed with two other species, making proper identification confusing. The following year of 2005, *P. villarrealiae* began to appear around the

1st of June at the beginning of the rainy season. Because of the heavy rains, many large specimens of *P. villarrealiae* were almost rotten, while at the same time, many big pinners and fruiting bodies were healthy. The region where these collections came from was recognized as the habitat described by Guzmán (1995) in his original article on the taxonomy of the species under discussion.

**5.1 Conclusion**

In this study we found that the content of alkaloids were low in comparison to other species, but only because of poor handling during collection and later by drying. This apparently produced a loss of the active tryptamine alkaloids, psilocine, psilocybine and baeocystine. Young adults are just beginning to obtain spores and are now cultivating this species at home. Spores for this species are now available from several spore vendors via the Internet.

It also appears that due to the World Wide Web and the Internet, numerous mushroom websites have spread the awareness of psilocybian consciousness throughout the world. This in turn has caused an unusual increase in young adults, student mycologists and researchers who now seek out these exotic new species of neurotropic fungi in order to either bioassay them and/or cultivate them, thus spreading the awareness of new species to others via the Internet. Their enthusiasm is pandemic and in the last five years, the ludicrous use of exotic species and strains of neurotropic fungi by many individuals has been steadily increasing by the 100s every week.

## ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES VOLUME VIII

There are now more than 55 known strains of exotic spores of *Psilocybe cubensis* available on the Internet that were obtained from third world countries, and species like *Psilocybe villarrealiae*, *Psilocybe antioquiensis*, *Psilocybe samuiensis*, and other newly collected species, all from foreign locations are now also becoming popular with cultivators of magic mushrooms.

Young adults, including students, are now traveling outside of North America to other continents and countries in search of the magic mushrooms. The majority of them possess no mycological training and presumably base their identification of these neurotropic species through the bluing reaction which occurs when a psilocybine producing mushroom is damaged from human handling, thus indicating the presence psilocine in said fungi.

These intrepid adventurers then post their findings with photographs of such species on the Internet. This in turn allows others to seek out these mushrooms basing their identifications on the macroscopic features of the genus and the intense bluing reaction found in at least 10 genera of natural occurring fungi. And additionally, this aids those intrepid adventurers into traveling to exotic countries in search of these magic fungi. Many then make spore prints and attempt to cultivate them into producing more spore prints and those prints end up being spread around the world via the Internet.

Because of this new awareness through the use of the Internet, hundreds of thousands of viewers on Internet mushroom websites and forums describe new species now being discovered and

provide spores and teks for the cultivation of these species. Eventually, some of these mushrooms find their way into the lives of known researchers who are then able to perform the chemical analysis and provide the scientific community with further information about the chemical structures known to occur within the magic shrooms. This research is further supported as well by the hundreds of posted trip reports of many who have bio-assayed the magic mushrooms and various trains that are being developed. Such individuals now seem to share a consciousness with the mushrooms and with others ludible users by promoting in others, an interest in furthering their studies in this particular sundry field of endeavor (Allen, 2009).

### Acknowledgments:

The authors of this paper wish to express their thanks and gratitude to Dr. Gastón Guzmán of the Instituto of Ecologia for his identification of collected specimens and for his reviewing this paper prior to publication, and to the facilities of the University of Leipzig, Germany for their assistance in the chemical analysis of the species described above. Thanks to Rujiporn Pratepasen at Scientific Technical Research Equipment Center in Chulalongkorn University for her technical assistance in specimen preparation for electron microscope analysis.

### References

**Allen, J. 2009.** A Chemical Referral and Reference Guide to the Known Species of Psilocin and/or Psilocybin-containing Mushrooms

**ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES  
VOLUME VIII**

and their Published Analysis and Bluing Reactions: An Updated and Revised List. (In press, *Psychedelic Salon*).

**Guzmán, G.** 1983. The Genus *Psilocybe*: a systematic Revision of the Known Species Including the History, Distribution and Chemistry of the Hallucinogenic Species. *Beihefte zur Nova Hedwigia* 74. J. Cramer. Vaduz. German.

**Guzmán, G.** 1995. Supplement to the monograph of the genus *Psilocybe*. In: O. Petrini & E. Horak's "*Taxonomic Monographs of Agaricales. Bibliotheca Mycologica* 159:91-141. Berlin-Stuttgart. Cramer.

**Guzmán, G.** 1998. Las Especies de *Psilocybe* (Fungi, Basidiomycotina, Agaricales) Conocidas de Jalisco (Mexico) Y Descripción de dos Nuevas Para la Ciencia. *Acta Botanica Mexicana* 43:23-32.



*Psilocybe villarrealiae*, Jalisco, Xalapa, Mexico



Human-plant interactions date back millennia, as does the discovery that some plants bring about changes in human cognition and behavior, including sexual interactions. This journal breaks new ground in its diligent explanation of these issues, and is a major contribution to ethnomycology, anthropology, and evolutionary psychology. John Allen's illustrations illuminate the text, and are worth the price of the journal on their own.

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