

LIFE

GREAT ADVENTURES. III
THE DISCOVERY OF MUSHROOMS
THAT CAUSE STRANGE VISIONS
TEEN-AGE ALLOWANCES

Psilocybin – History, Personal Stories and Potential Future

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On May 13, 1957, a *Life* magazine article by R. Gordon Wasson brought the ritual use of hallucinogenic mushrooms in Mexico to the attention of readers in North America and a new age, the psychedelic 60s, was about to begin. The title of Wasson's now famous *Life* magazine article was "Seeking the Magic Mushroom" and the opening spread (Figure 1, pp 100-101) shows *Curandera* "Eva Mendez" preparing for the ceremony by smoking the mushrooms in burning aromatic leaves. Wasson and his Russian-born wife, Valentina, had spent four summers in the remote mountains of Mexico seeking the mushrooms with vision-giving powers and in this article Wasson changed the names of the Mixteco Indians to protect their

privacy. "Eva Mendez" was actually the Mazatec healer, Maria Sabina, who was to become quite famous.

It was the night of June 29-30, 1955 "in a Mexican Indian village so remote that most of the people still speak no Spanish, my friend Allan Richardson and I shared with a family of Indian friends a celebration of 'Holy communion' where 'divine' mushrooms were first adored and then consumed." It was a ceremony of mixed Christian and pre-Christian elements. "The mushrooms were of a species with hallucinogenic powers; that is, they cause the eater to see visions. We chewed and swallowed these acrid mushrooms, saw visions, and emerged from the experience awestruck... Richardson and I were the first white men in recorded history to eat these divine mushrooms, which for centuries have been a secret

of certain Indian peoples living far from the great world in southern Mexico. No anthropologist had ever described the scene that we witnessed." Figure 2 shows pages 102-103 of the famous article with an image of the house where the mushrooms were consumed and images



Figure 1.

of Wasson first taking his ration of six pairs of mushrooms from *Curandera* "Eva Mendez" and then, following custom, chewing them slowly, taking about one half hour to eat. This was the second night, when Allan Richardson

AS A BUMBLING LOVER

20 CENTS

Figure 2.



Figure 3.



photographed the ceremony rather than partaking again, and so we have the images on pages 104-105 (Figure

3) of the ceremony that was held in an underground room in complete blackness photographed by pointing the flash towards audible sounds.

For the hordes of mostly young people who would soon descend on this region, the next pages, 106-107, became like a biblical guide, for they contain "Rare vision-giving fungi shown for the first time"

(Figure 4). On his last trip to southern Mexico before writing the *Life* article, Wasson was accompanied by Professor Roger Heim, a mycologist and head of France's Muséum National d'History Naturells. Heim would collect and name many of these magic mushrooms. There was the prized *Psilocybe mexicana* Heim, found in pastures (see Figure 13 in the accompanying article "The genus *Psilocybe* in North America" by M. Beug in this issue of FUNGI); the "Crown of Thorns," *Psilocybe zapotecorum* Heim, found on marshy ground (see Figure 13, *Psilocybe hoogshagenii* Heim sensu lato, in the accompanying article Beug); the "Mushroom of Superior Reason," *Psilocybe caerulea* Murrill var. *nigripes* Heim also found on marshy ground (see Figure 4 in the accompanying article by Beug); and "Children of the Waters," *Psilocybe aztecorum* Heim, found on woody debris (see Figure 18 in the accompanying article by Beug). There was also the abundant *Psilocybe cubensis* (Earle) Singer, found on dung (Figure 5). *Psilocybe cubensis* was to become the low-potency less desirable *Psilocybe* served to uninformed *gringos* who would soon be flooding to Mexico in pursuit of the Magic Mushrooms.

About his experiences Wasson said "For the first time the word ecstasy took on real meaning. For the first time it did not mean someone else's state of mind." But Wasson also issued a caution that was soon to be lost on the masses: "hallucinogenic mushrooms must be treated with extreme caution. Among the Indians, their use is hedged with restrictions of many kinds. Unlike ordinary mushrooms, these are never sold in the marketplace, and no Indian dares to eat them frivolously, for excitement. The Indians themselves speak of their use as *muy delicado*, that is, perilous" (p. 106).

Fast forward to the present and an article hot off the presses as I write this. The title is "Hallucinogens as Medicine" and it appeared in the December 2010 *Scientific American* (Griffiths and Grob, 2010). Roland Griffiths is the lead investigator of the psilocybin research initiative at Johns Hopkins. Charles Grob's research at UCLA includes looking at psilocybin for treating anxiety in cancer patients. "Early results from the new trials point to the promise of these


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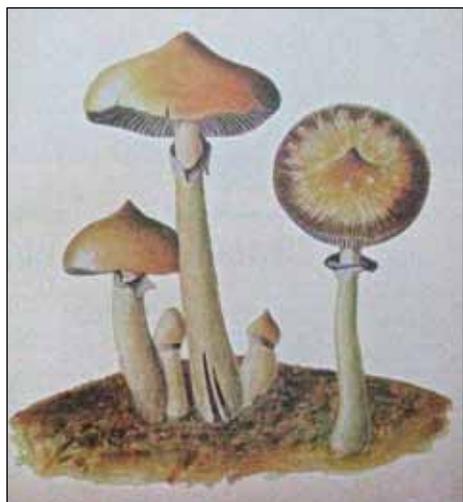
Figure 4.



therapies, with some patients reporting profound spiritual experiences and, hence, the ability to make important life changes... understanding how mystical experiences can engender benevolent attitudes towards oneself and others will, in turn, aid in explaining the well-documented role of spirituality in psychological well-being and health.” But they also caution that “In the Johns Hopkins study, even after careful screening and at least eight hours of preparation with a clinical psychologist, about a third of the participants experienced some period of significant fear and about a fifth felt paranoia sometime during the session... other potential risks of hallucinogens include prolonged psychosis, psychological distress, or disturbances in vision or other senses lasting days or even longer.” In unsupervised situations, they report that paranoia following mushroom usage has led to accidental injuries and even suicide.

When the *Life* magazine article was written, no one yet knew what drug

Figure 5.



was present in the mushrooms. It was Albert Hoffman, a Swiss researcher working for Sandoz Pharmaceuticals who successfully isolated and synthesized the two principal active ingredients of the magic mushrooms, announcing his success in the late 1950s. He named one compound psilocybin (Figure

6) and the other psilocin. Psilocin is simply a psilocybin molecule that has been dephosphorylated (loss of the

Figure 6.

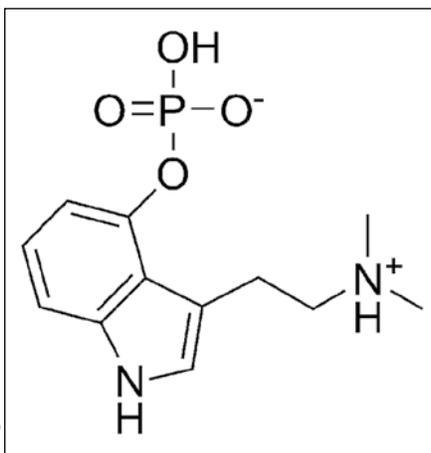
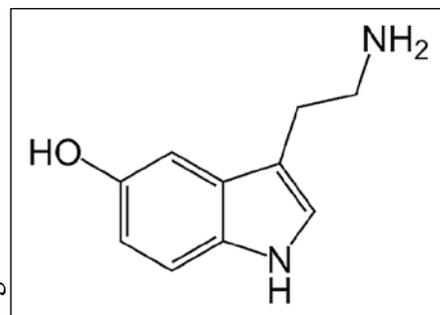


Figure 7.



phosphate group, P, and its surrounding oxygens in the Figure 6, leaving an -OH group in its place). Psilocin is the more potent of the two chemicals, but since the GI tract quickly dephosphorylates psilocybin, it matters little which drug you ingest – they both wind up as psilocin as they enter circulation and mimic serotonin (Figure 7) in the brain. A few years before, Albert Hoffman had synthesized LSD-25, one of many derivatives of lysergic acid he was making in a search for a drug to help stop excessive bleeding in childbirth. The lysergic acid is isolated from ergot, the resting stage of the fungus *Claviceps purpurea*. Ergot, a contaminant in grain that looks much like a blackened kernel of wheat, was known to produce feelings of intense heat followed by severe loss of blood flow, resulting in a gangrene-like condition, leading, in severe cases, to the loss of arms and legs. The condition, produced by ergotamine, is known as

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gangrenous ergotism but because of the intense fire-like pain of the early stages of the disease became known as St. Anthony's fire (Hudler, 1998a). Madness also often accompanied accidental ergot consumption and was caused by two compounds in Ergot, ergine and lysergic acid hydroxyethylamide, the target of Hoffman's research (Hudler, 1998a).

The discovery of the hallucinatory effect of LSD-25 was purely an accident resulting, Hoffman believed, from the absorption of tiny amounts of LSD directly through his skin. It was Albert Hoffman's fascination with the effects of LSD (and the consequent massive self-experimentation with LSD by Hoffman and many other researchers at Sandoz) that led Hoffman to also investigate *Psilocybe* species to see what caused them to produce hallucinations so remarkably similar to LSD. He knew that LSD produced hallucinations that were much longer lasting than the hallucinations produced by *Psilocybe* species (on average 12 hours for LSD versus 6 hours for the mushrooms) but the hallucinations were otherwise exceptionally similar in nature. Were the active ingredients of the *Psilocybe* mushrooms at all structurally similar to LSD, a slight modification of a metabolite from the mushroom *Claviceps purpurea*? To the untrained eye, the answer is no, LSD is a much more complicated molecule. But at their core, the two molecules share a very similar indole

backbone and both would be expected to bind to the same receptors in the brain – albeit bind with different strengths. LSD binds much more strongly and thus it is no surprise that it is both effective at a much lower dosage and effective for much longer – much too long in my humble opinion. LSD is also much more likely to cause long-term adverse effects and “flashbacks.”

In the 1950s, R. Gordon Wasson and his associates were not alone in traveling to Mexico to learn about the ancient mushroom rituals of the Indian peoples. Blasius P. Reko, Richard E Schultes and others were also involved in rediscovering and documenting the use of psilocybin mushrooms in shamanic ceremonies by indigenous Mesoamerican peoples. They uncovered quite convincing evidence that the shamanic rituals that they were observing were remnants of ancient religion practiced by Aztec and Mayan civilizations, modified little by the overlay of Catholicism introduced by the Spanish. Their evidence included “mushroom stones” and other archeological evidence, plus they were able to uncover some obscure writings by one early monk that survived despite Catholic Church attempts to wipe out all ancient knowledge of these peoples and to persecute users of magic mushrooms. Schultes and others came to realize that *Psilocybe mexicana* was esteemed as a holy sacrament called *teonanacatl* (God's flesh) in Aztec (see Stamets, 1996).

In the summer of 1960, Timothy Leary was vacationing in Cuernavaca when he tried the mushrooms, purchased from a street peddler (Hudler, 1998b). The influx of thrill-seekers after the *Life* article was already having a profound effect on southern Mexico and the societal prohibitions regulating use of *Psilocybe* mushrooms were already fraying.

As a psychotherapist and newly appointed director of the Center for Research in Personality at Harvard University, Dr. Leary felt that the mushrooms could form the basis for his newly proposed existential approach to psychotherapy, where the therapist becomes immersed in the patient's psychological turmoil. The mind-altering mushrooms would allow the therapist to reach the mental state of the disturbed. Leary had been told by his superiors to shake things up at Harvard, and at this

he was possibly too successful.

Within six weeks of his return from Cuernavaca, Sandoz Pharmaceuticals had granted Dr. Leary four bottles of psilocybin pills for research. Along with a colleague, Richard Alpert (who was to change his name to Ram Dass) and several graduate students, Timothy Leary began experiments to learn the effects of dosage and place, soon moving from classroom to his home and student residences to escape the sterility of academia. Undergraduates began to hear rumors of psilocybin sessions turned orgy and demanded to be able to take part. Scandal ensued. Traditional psychologists at Harvard began to express concerns in private but soon word of their displeasure reached the pages of the *Harvard Crimson*. Timothy Leary added mescaline and LSD to his researches - recreational drug use was sweeping the country.

In 1963 official concern came to a head at Harvard and both Timothy Leary and Richard Alpert were fired, only to go on to become cultural icons. In the 1960s Timothy Leary's slogan was “Turn on, tune in, drop out.” Rebellious youth rioted against the Viet Nam War, smoked pot and tried all manner of hallucinogens – leading to increasing official consternation.

Meanwhile the CIA and the military were exploring the potential for hallucinogenic drugs. At the very last Mycomedia® gathering (in 1999) at Breitenbush, a hot springs retreat in the Oregon Cascades, we all jammed with Ken Kesey and his band, the Merry Pranksters, and listened while Ken told the audience of participating in those CIA drug experiments and clandestinely obtaining the keys to the locked cabinets with the various hallucinogens – and thus the birth of the “Kool Aid Acid” bus and his psychedelic tours about the U.S. with his Merry Pranksters. At Breitenbush at the end of October, 1999, we were marking the end of the biennium. We even got to ride on the last incarnation of the famous bus.

At this final Mycomedia® event (it had been about 15 years since we had last all been together) Paul Stamets had spared no expense to bring speakers from all over the world, shamans and scientists alike. It was the weekend of Halloween, the traditional time of year for the Mycomedia® gatherings, while choice

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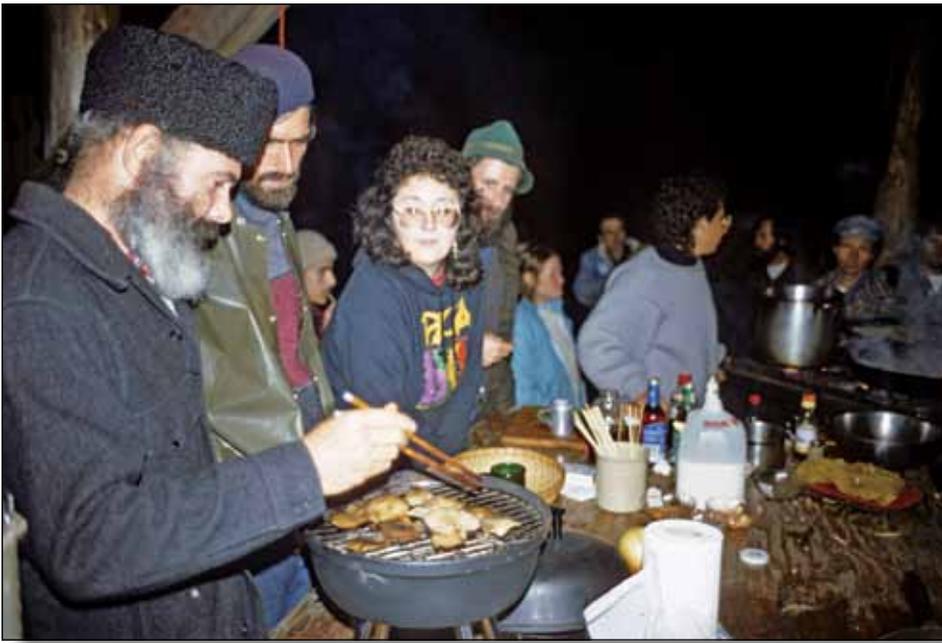
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Figure 8.



edible mushrooms were still abundant in the forests around Breitenbush, and cooking demonstrations, often in the past by Dr. Andrew Weil (Figure 8), were always part of the festivities. Halloween night there was a costume party. At the dance, Gary Lincoff was the most exquisitely costumed of all – in the authentic dress of a Siberian Shaman, obtained in his tours of the Russian Far East in pursuit of ethnomycological knowledge – his talk had been on what he learned in that part of the world where *Amanita muscaria* is the mushroom of the shamans. As I listened to Gary, I came to realize that were this an earlier time or had Gary lived in Siberia, he would indeed have been one of those very special people, a shaman.

I had agreed to be the guide that 1999 Halloween night for a writer/reporter who wanted to try magic mushrooms for the first time. I do not know what mushrooms were consumed or how many. But I do believe that I may have been one of the few who merely observed the proceedings. But far from what one might imagine from the descriptions of Timothy Leary's orgies, it was a sublimely quiet and peaceful evening. Some people danced a little but most sat quietly on cushions and couches, visiting at times but mostly turned inward and reflective. No one was loud, boisterous or rowdy. People came and went from the hot pools and the steam sauna. Participants enjoyed the beauty of the ancient forest and the old wooden meeting hall where we were

gathered. I wondered, once again, why these mushrooms are illegal.

In 1968 the U.S. federal prohibition of psilocybin and psilocin was passed. Possession was treated the same as possession of hard addicting drugs like heroin and cocaine. The battle of Timothy Leary and Richard Alpert and the Harvard administration was the focal event that led to the passage of this law. For the first time, a drug of bright, affluent white kids had been banned. Research on hallucinogens at Harvard and elsewhere came to an abrupt end (Wark, 2010).

The founding in the late 1960s of The Evergreen State College, an alternative college with evaluations rather than grades, team-taught integrated programs rather than courses and no specific course requirements, would soon provide a new venue. The emergence of this college at this time was no accident. Many of the early

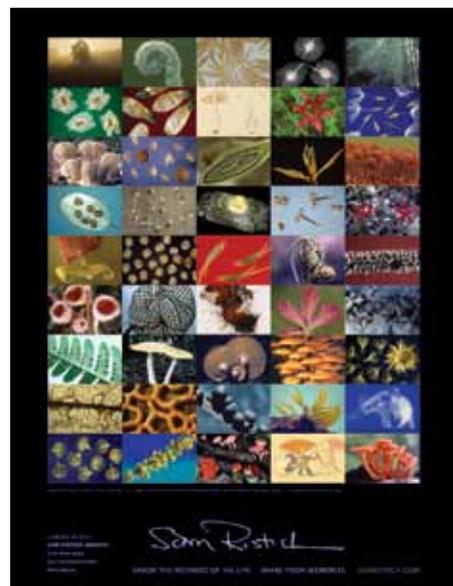
Evergreen faculty came from failed educational experiments elsewhere, experiments that were a product of the times. Rebellious faculty, having been fired for participating in Civil Rights marches and other protest activities like the Viet Nam War protests, flooded to Evergreen, whose doors opened to the first faculty in 1970 and to students in 1971. Students who had departed from multiple previous institutions poured in. I was hired in 1972, somehow picked out of the 10,000 faculty applications that they had received (including, according to mycologist Dr. Ron Peterson, an application by his entire University of Tennessee Biology Department, to bring their department intact to Evergreen). I applied to Evergreen merely because I wanted to live in the Pacific Northwest, ski, fish and hunt mushrooms for dinner. I had not a clue what I was about to get into. I had tried marijuana a few times and was quite unimpressed. The most notable drug event of my young professional career had been the morning that I gave my last lecture at Harvey Mudd College before leaving to join the Evergreen faculty. The freshman women (there were about 20 or 30 women in all of Harvey Mudd

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in those days) invited me to their dorm for breakfast. It consisted of “brownies” and orange juice. I consumed half of a pan of the “brownies” and they had so much weed in them that I could barely get them down. I went on to my last lecture and indeed the rest of the day totally unaffected! The girls were most disappointed.

Back when I had started graduate school, the one thing that was clear to me was that I never would be a teacher – I was headed for industry. But several months before completing my PhD, my advisor had asked me to see what effect DDT and some other pesticides had on Carbonic Anhydrase, the enzyme system that was the focus of my research. The resultant paper was accepted by the journal *Biochemistry*, but the editor said that the work was so important that I needed to also publish an article either in the journal *Science* or in the British Journal *Nature*. But a *Science* reviewer rejected my article and then sent in the paper essentially word for word under his name, eventually resulting in two Nobel Laureates intervening on my behalf, and my article was also published in *Science*. I had not yet read Rachel Carson’s *Silent Spring*, and knew not what I had done. Industry then twisted the meaning of my work to “prove” that DDT could not be causing egg shell thinning in birds. To make amends, I wrote to a leading ornithological researcher at Cornell University suggesting the course of research that might undo the damage I had inadvertently done. He wrote back – to my thesis advisor – thanking him for the sage advice. I was then thoroughly scolded by my advisor for giving away research ideas. These two events were focal points turning me away from both industry and university research and to academia at small colleges.

Arriving at Evergreen, I was a physical chemist with not the slightest interest in biology and my mycological training consisted of one previous adult education course at the University of Washington under Dr. Daniel Stuntz. But no one else on the faculty knew anything at all about mushrooms and so the students came to me. Paul Stamets, Jeremy Bigwood and Jonathan Ott all showed up in the mid-1970s. *Psilocybe* mushrooms were not mentioned in any of my field guides and I thought that they were restricted to southern

Mexico. These students quickly taught me otherwise, and my research was transformed. At Evergreen I had initially become an Environmental Chemist. My colleague, Dr. Steve Herman, and our students had just completed the research that secured the final ban on the use of DDT in North America (my amends were now complete), another group of our students had done the research that ultimately helped close a smelter that was covering Tacoma, Washington, with arsenic and yet another group worked on PCBs in marine mammals and formed a research cooperative still in operation today. Prominent U.S. Senators from the cotton belt were trying to get us both fired, as were the City of Tacoma, the Washington State Department of Agriculture, and officials from Hawaii (because of some pesticide related research). For still other research we were also considered a threat to the now defunct aluminum smelting industry along the Columbia River. The EPA and the NSF were funding much of our work but the EPA itself was so under threat that the head of the U.S. EPA even came to Evergreen to meet personally with our students and explain the predicament that they were in with Congress. After this, I was politically radicalized and mushroom research was a welcome relief.

Paul Stamets, Jeremy Bigwood and I set out to discover which mushrooms in the Pacific Northwest were potentially hallucinogenic and which were not. Jeremy Bigwood knew the West Coast head of the DEA (how that came about remains a mystery to Paul and me to this day – but I will not repeat our theories here). Soon, seekers of magic mushrooms were all over western Washington and western Oregon. They



Figure 9.

were swarming farm fields, critically examining mulch and wood chip beds, and were stooped over on athletic fields

and prison exercise yards.

Paul Stamets (Figure 9) was to work with me for the next four years and completed his Bachelor’s degree – I was his only professor. For his capstone senior project, Paul completed the manuscripts for his first two books, which were soon published. One manuscript became *Psilocybe Mushrooms and their Allies* and the other, with coauthor Jeff Chilton, became *The Mushroom Cultivator*, soon to be a major book used, not only to start thriving edible mushroom growing businesses, but also as a guide for the cultivation of hallucinogenic mushrooms.

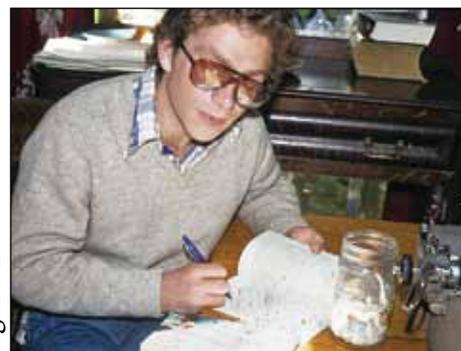


Figure 10.

Jeremy Bigwood (Figure 10), who never seemed interested in completing a degree, instead worked with me as a registered undergraduate for roughly six years. His focus was mushroom cultivation as well as chemistry. He had coauthored (under an alias) *Psilocybin: Magic Mushroom Grower’s Guide* (Oss and Oeric, 1976 & 1986) and in 1978 coauthored with Jonathan Ott the book *Teonanacatl: Hallucinogenic Mushrooms of North America*. While Paul stayed pretty focused on mushrooms, Jeremy was interested in all hallucinogenic plants, using that interest to prepare a list of all of the plants and spices containing controlled substances that one could purchase at Safeway®. I used that list in a frontal approach on the law against psilocybin and psilocin possession while as an expert witness in a trial of a person who had been cultivating *Psilocybe cubensis*. The arguments were that 1) the law provided no list of which mushrooms it was illegal to possess and 2) there was unequal application of the law since Safeway® was never prosecuted for their sale of hallucinogenic materials. I did succeed in getting threatened with a citation for

Figure 11.



contempt of court. I did not succeed in protecting the grower from prison.

Jonathan Ott was a prolific writer. In addition to his previously mentioned book with Jeremy Bigwood, he wrote *Hallucinogenic Plants of North America* (Ott, 1976) and published articles on psilocybin in fungi (Ott and Guzmán, 1976; Ott and Pollock, 1976). Jonathan never liked the term hallucinogen and coined the term “entheogen,” but though he championed the term for years, it never caught on. Jonathan became a close friend of R. Gordon Wasson and soon left Evergreen to work on *Amanita muscaria* and *Amanita pantherina* with Dr. Scott Chilton (Figure 11) at the University of Washington. Interestingly, even though ibotenic acid and muscimol, the active ingredients of these *Amanita* species, are potent mind-altering drugs with a very narrow dose-response curve (it is easy to get too much) and very nasty side-effects, neither ibotenic acid nor muscimol were ever made illegal. They never got the notoriety

of psilocybin and psilocin. The person championing *Amanita muscaria* was R. Gordon Wasson, a Vice President of J. P. Morgan & Co, a staid New York banker. Psilocybin and psilocin and LSD were championed by Timothy Leary and many other flamboyant individuals.

The age of ethnomycology, initially developed by R. Gordon Wasson, was also taking off. The champions were Jonathan Ott, Terrance McKenna, Andrew Weil, Jochen Gartz and others. I still vividly remember when Jochen Gartz first contacted me from what was then Communist East Germany – he wanted vouchers of the Pacific Northwest *Psilocybe* species that Paul, Jeremy and I were working on. What to do? There was no legal way to respond to the request but I packaged up the requested specimens, labeled them “dried material for scientific research” and put them in the mail. Much to my amazement, it worked.

The Evergreen students formed a core group that organized two international hallucinogenic mushroom conferences in the 1970s, the first one held at Millersylvania State Park near Olympia, Washington, in 1976 and the second at Fort Worden in Port Townsend, Washington, in 1977. At the 1977 conference R. Gordon Wasson, Albert Hoffman and Carl Ruck first postulated that the use of psychoactive fungi lay at the heart of the Eleusinian mysteries (ancient Greek religious ceremonies that persisted for 2,000 years, yet whose ceremony’s secrets could not be mentioned – under pain of death). These early conferences were followed by a conference on Orcas Island in the San Juan Islands of Washington and then by a series of conferences at Breitenbush in the Oregon Cascades organized by Mycomedica® with Paul Stamets as the principal driving force of the organization. I believe that Dr. Andrew Weil, a young MD from Harvard,

interested in alternative medicine, drug use and abuse, and mushroom use, attended every one of these conferences. He was to become a very close friend of Paul Stamets and he provided us both with much sage advice on the importance of set and setting in the use of psilocybin mushrooms.

These conferences also attracted Dr. Gastón Guzmán (Figures 11 and 13), who would write a monograph to the genus *Psilocybe* and become the world *Psilocybe* expert; Dr. Steven Pollock (Figure 12) came from Texas bringing attention to the fact the psilocybin mushrooms were also present in the southern states of the U.S.; Gary Menser (Figure 13) contributed his knowledge of the Oregon hallucinogenic species. There were many others drawn to the region, including John Allen who has gone on to make the pursuit of psilocybin species around the globe his life passion. Terrence McKenna was also present at some of the events and became another colorful champion of hallucinogenic mushrooms. Terrance McKenna argued that “the root cause of society’s ills today is not that we use too many hallucinogens, but rather that we use too few” (Hudler, 1998b).

I attended the conferences to speak about toxic mushrooms in general and

Figure 12.




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Figure 13.



to interview users of *Psilocybe* species in order to understand dosage and effects. Over the next several years I quietly observed psychoactive mushroom use and noted their effects on hundreds of participants. My policy was to discourage use of the mushrooms but to assist in identification so that no one consumed one of the several deadly look-alikes. I was struck with how different it was to be around people using mushrooms containing psilocybin than it was to be around drunks. Unlike being in a rowdy group where there was high alcohol consumption and one can sometimes sense actual physical danger, the mushroom consumption scenes I observed were always very subdued and peaceful. Some individuals were prone to laughter. *Gymnopilus spectabilis*, a very bitter tasting species with significant levels of psilocybin is even known as “Big Laughing Gym.” My favorite tale involves a story from Japan where a housewife mistook “Big Laughing Gym” for an edible and was later found dancing and laughing naked in the street. Another tale of laughter came from a colleague, near retirement age, who along with his wife each consumed about 10 specimens of *Psilocybe semilanceata* shortly before hosting a dinner party. Their guests were totally mystified why the colleague and his wife found everything so very funny.

I learned that the mushrooms were generally not abused as is the case with many other drugs. They are not addictive and most individuals use them only very infrequently and reflectively in quiet, tranquil settings. The few who push the boundaries soon learn that with repeated use the mushrooms lose their transformative power. The use of mushrooms containing psilocybin and

indeed perilous and should not be taken lightly. *Psilocybe cyanescens* even proved lethal to one young child who consumed it from his yard. A physician told me of treating an adult patient who nearly died from aspirating some of the mushroom. However, psilocybin and psilocin themselves are remarkably non toxic. There is no risk of death from overdose as can happen with cocaine and some other drugs of abuse.

Throughout the 1970s and early 1980s my students kept asking how it was that I never would try the mushrooms and asking how I could lecture about their effects without personal knowledge. My mushrooming partner, K, fondly known by my children as their honorary grandmother, wanted to experience these mushrooms. Thus in the mid-1980s I went to the median of the Evergreen Parkway and in broad daylight picked about 200 *Psilocybe semilanceata* specimens. I knew that no one would take notice because I had been gathering mushrooms of all kinds on campus for over a decade. I took them to Breitenbush for what was to be the last Mycomedia® conference for many, many years. The conference was packed with friends and experts and hangers-on. It was the second night, a Saturday, about 7 PM. I slowly consumed 15 specimens – they were quite tasty, not at all unpleasant as I had expected. There was no nausea as I had been told might happen. K and two other mycologists in the room also consumed the mushrooms. A fifth person, Maggie Rogers, observed. We sat quietly and in just under one hour mycologist L was laughing and seeing the world through very rosy glasses and soon the mycologist G was feeling similar effects. They both

psilocin ideally requires both guidance and restraint. Set and setting is very important. If you are troubled, the mushrooms can increase your sense of anxiety. Individuals told me of cases where they needed years of therapy after a bad trip – the mushrooms are

left to attend the evening lectures. K and I waited and waited – nothing. Determined to have this experience, we each consumed more mushrooms. This time about 30 mushrooms each. We visited and relaxed with Maggie still observing, but still nothing. We each took about 20 more mushrooms, pretty well polishing off all that I had brought along – a total of about 75 each, 6 times what Wasson had consumed in Mexico and these were very potent mushrooms that we had eaten. We then headed off to the last of the evening lectures. A bag of *Psilocybe cyanescens* was being passed around so I helped myself to a handful, remembering what Repke and Leslie had told me about their strong visual effects. I do not remember if K took any more at that point or not. As we left the lecture, both still feeling quite normal and quite disappointed, someone offered me fresh *Psilocybe cubensis* from a shopping bag, so I took a good-sized handful and proceeded to munch them slowly as I walked K and Maggie to their cabin. In all my years of attending these conferences this was the first time I had been offered any magic mushrooms and the first time that I had even seen them out in the open other than a few labeled specimens on the display tables along with hundreds of other mushrooms of all shapes and sizes.

After getting Maggie and K safely to their cabin, I then joined a friend who was working on trying to determine the structure of some of the other indole-like compounds that we had been seeing in *Psilocybe cyanescens*. We drank some very fine rare California wines (about two bottles, I did not keep track) and talked about his research while observing his roommates who were quietly off in a distant bemushroomed world. It was about 1 AM when I headed back to my cabin, walking in a drizzle through the beautiful old-growth rainforest. Resigned to never know what effects these mushrooms could have, I slipped into my sleeping bag and closed my eyes.

About to put this next bit down on paper for the first time ever, tears have come to my eyes and powerful emotions have welled up – yet it is more than a quarter century since the event.

When I closed my eyes twenty five years ago, visions in a brilliant blue soon commenced. The blue was the exact same blue of the images from

the Evergreen State College Scanning Electron Microscope, where I had spent so many hours watching Paul Stamets photograph *Psilocybe* and other mushrooms (Figures 14, 15). I felt myself leave my body and proceed far, far away and worried that I might never get back. Growing scared after a few more minutes, I opened my eyes and it was over as fast as it had begun. I dressed and walked to the cabin where K and Maggie were sleeping and knocked on the door to tell them. They dressed and came to the cabin, K wanting more mushrooms so that she could also experience the effect – her massive 6X dose had had no effect. But I had previously thrown away the last few mushrooms not wishing my current state on anyone else. Maggie and K decided to stay and watch over me for a bit when I decided to lie down and then closed my eyes again in a darkened room. As soon as I did, the visions returned. By then the other two mycologists had joined K and Maggie and for the next hour or so I would lie with the sleeping bag pulled over my head and narrate the trip as it was happening. Each time I closed my eyes and darkened the room with my sleeping bag I would leave my body and go far, far away into that gorgeous blue world. I would open my eyes and all would be normal. Close my eyes and plunge into darkness under my sleeping bag and the visions would resume. Fortunately, I knew from years and years of research that I would survive this experience and I could both enjoy the extreme beauty and marvel at the power of the mushrooms. At about 2 AM, Maggie and K returned to their cabin. The two mycologists also retired. My visions continued as I drifted in and out of a restless sleep. At 4 AM, almost exactly 6 hours after I had consumed the last of the *Psilocybe cubensis* mushrooms, there was what seemed like a sudden explosion and as suddenly as it had started it was all over. I went into a sound sleep.

At breakfast, I told Andrew Weil about how much I had eaten and what I had experienced. Then I got into my VW Squareback and headed up the spine of the Cascade Mountains on logging roads straight towards my vineyard, which lies due North of Breitenbush. Soon I started having difficulty keeping the car on the road. I was scared and pulled over fearing that the mushrooms still held

sway. Then I saw it. The right front tire was flat. I changed the tire and made it back to the vineyard without further incident. But for a year afterwards, I broke into a sweat just reading about someone involved with drugs of any kind. For many years I said and felt that this was the one thing in my life that I wish that I had never done. But I realize now that there has also been a permanent change in me – I am now much more sensitive and emotional than ever before. I know that if cancer ever strikes and I am nearing my end, there is a traumatic stress leading to PTSD, or if I were to suffer incurable depression or unmanageable pain, I will look for a way to reach out to the mushrooms one more time.

Soon after this Breitenbush experience, someone broke into my lab and stole the two tiny vials of my standards – one vial with a trace of pure psilocin and the other with a dab of pure psilocybin. It was not enough for a person to experience any effect, but it was sufficient to bring my research to a halt. In those days no one was making the two chemicals and existing stocks of pure chemical were nearly exhausted everywhere. Years later I was told that the thief had been a very nice student of mine, but a student living a double life. When the student was killed by police shooting at a bank robber holed up in a trailer in a back yard in Seattle, we found that my wife and I (he was also one of her students) had befriended “The Hollywood Bandit,” a notorious Western Bank Robber – and a modern Robin Hood.

The rebirth of funded scientific research on hallucinogens, after a 40-year hiatus, began in the 1990s. The funding was neither from taxpayer money nor pharmaceutical company money, but from private nonprofit groups. The first paper on the revival of research that I found was titled “Psychedelics: The second coming” (Taylor, 1996). Then in 1997 a paper described the case of a 34 year-old male who obtained rapid and sustained relief of obsessive-compulsive disorder using psychedelic drugs (Moreno, 1997). In

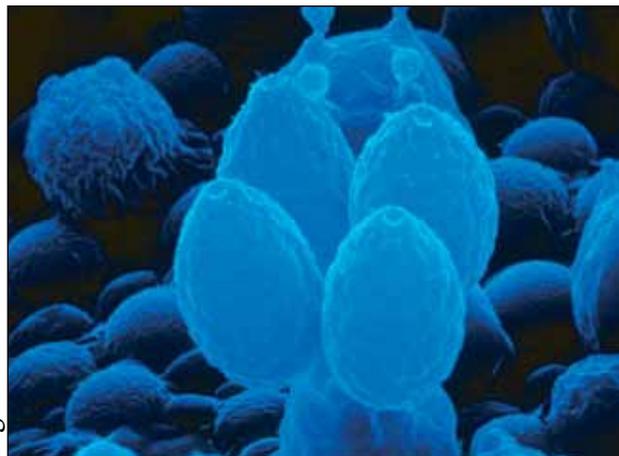
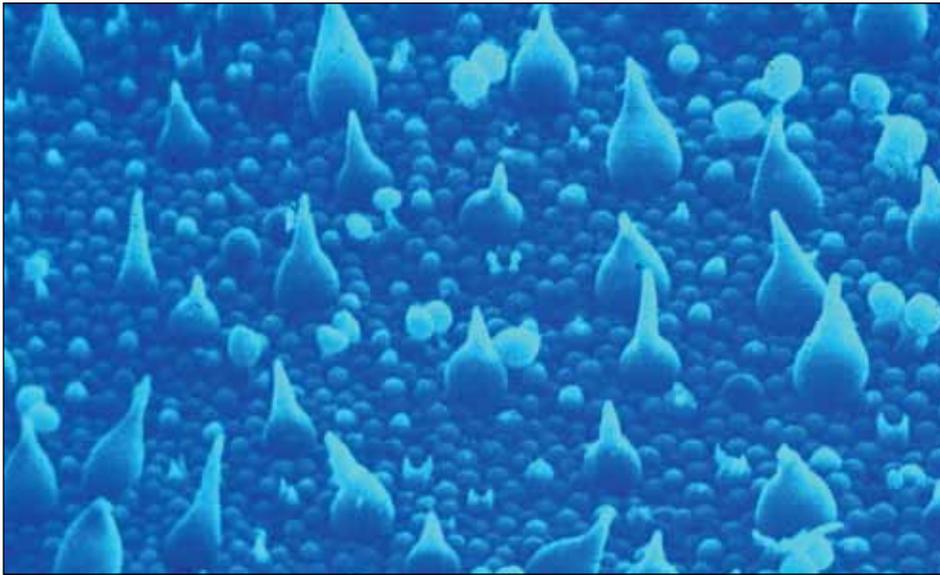


Figure 14.

2002 a review of the widely dispersed literature on psilocybin pharmacology was published in *Addiction Biology* (Seifert, 2002). A study in 2005 (Palmer, 2005) was followed by an explosion of news reports in 2006. *Scientific American* published two stories in 2006. The first was “Magical Mushroom Tour” (Choi, 2006) and the second, “Not Imagining It” describes research by Roland Griffith of Johns Hopkins University on the pharmacology and physiological effects of psilocybin (Beillo, 2006). By 2008, the floodgates were open wide with headlines like “Spiritual Effects of Hallucinogens Persist, Johns Hopkins Researchers Report.” The *Lancet* carried a great review titled “Research on psychedelics moves mainstream” (Morris, 2008). There was a review in 2008 of three new books in “Psychedelic medicine: new evidence for hallucinogenic substances and treatments” (Biley, 2008). A conference, “Psychedelic Science in the 21st Century” was held in San José California in April 2010. The development of large-scale synthetic methods to produce psilocin and psilocybin now provides researchers with a convenient and measurable way to utilize psilocybin and psilocin (Shirota, 2003). Psilocybin research is once again underway.

On April 14, 2010, *The Oregonian* newspaper published the story of a 65 year-old man, Clark Martin, a retired clinical psychologist from Vancouver, Washington, who was suffering from seemingly untreatable depression as he battled with kidney cancer and chemotherapy (Tierney, 2010). He was admitted into the research program at Johns Hopkins University (described in Griffiths and Grob, 2010). He took psilocybin in an attended, controlled

Figure 15.



setting on a couch with eye mask and head phones while listening to classical music. A year later he reports that the one six-hour experience was so profound that it has helped him overcome his depression and profoundly changed his relationships – marking it among the most meaningful events of his life.

Numerous news reports including the *Oregonian* article have reported on the findings of the scientists that many participants have a profound spiritual experience similar to the experiences reported both by religious mystics and those who meditate. Egos and bodies vanish as they feel part of a larger state of consciousness. Griffiths feels that it is like the human brain is wired to experience these “unitive” experiences, perhaps because of an evolutionary advantage. The “feeling that we are all in it together may have benefited communities by encouraging reciprocal generosity.” Griffiths was rediscovering what Wasson had learned over 60 years ago, when asking for the first time about the mushrooms from a Spanish speaking Indian: “*Le llevan ahí donde Dios está.* ‘They carry you where God is’ an answer that we have received on several occasions, from Indians in different cultural areas...” (Wasson, 1957).

Today research is underway not only at Johns Hopkins University and UCLA but also at many other colleges and universities including the University of Arizona, New York University, the University of California and even, once again, Harvard. The *Psilocybe* mushrooms are indeed “*muy delicado*,” but used with respect, restraint and care can, for at least

some who turn to them, create from just one exposure a spiritual and emotional transformation lasting for years.

References

- Biello, D. 2006. Not Imagining It. *Scientific American* 295(5): 33-35.
- Biley, F. C. 2008. Psychedelic medicine: New evidence for hallucinogenic substances and treatments. Volumes one and two. Psychedelic horizons. *Journal of Psychiatric and Mental Health Nursing* 15(9): 787-790.
- Choi, C. Q. 2006. Magical Mushroom Tour. *Scientific American* 295(3): 36.
- Griffiths, R. S., and C. S. Grob. 2010. Hallucinogens as Medicine. *Scientific American* 303(6): 77-79.
- Griffiths, R. R., W. A. Richards, M. W. Johnson, U. D. McCann, and R. Jesse. 2008. Mystical-type experiences occasioned by psilocybin mediate the attribution of personal meaning and spiritual significance 14 months later. *Journal of Psychopharmacology* 22(6): 621-632.
- Hudler, G. W. 1998a. Ergot of Grain Crops. *Magical Mushrooms, Mischievous Molds* Chapter 5: 69-85. Princeton: Princeton University Press
- Hudler, G.W. 1998b. Hallucinogenic Mushrooms. *Magical Mushrooms, Mischievous Molds* Chapter 11: 172-185. Princeton: Princeton University Press.
- Morris, K. 2008. Research on psychedelics moves into the mainstream. *Lancet* 371(9623): 1491-1492.
- Moreno, F. A., and P. L. Delgado. 1997. Hallucinogen-induced relief of obsessions and compulsions. *The American Journal of Psychiatry* 154: 1037-1038.

- Oss, O. T., and O. N. Oeric. 1976. *Psilocybin: magic mushroom grower's guide*. Seattle: Homestead Press (reprinted, 1986; Berkeley: Lux Natura).
- Ott, J. 1976. *Hallucinogenic plants of North America*. Berkeley: Wingbow Press,
- Ott, J., and J. Bigwood, ed. 1978. *Teonanacatl: hallucinogenic mushrooms of North America*. Seattle. Madrona Press.
- Ott, J., and G. Guzmán. 1976. Detection of psilocybin in species of *Psilocybe*, *Panaeolus*, and *Psathyrella*. *Lloydia*. 39: 258-260.
- Ott, J., and S. H. Pollock. 1976. Psychotropic mycoflora of Washington, Idaho, Oregon, California, and British Columbia. *Mycologia* 68: 1267-1272.
- Palmer, G. A., and D. D. Daiss 2005. Personality characteristics of adolescents with hallucinogen, methamphetamine, and cannabis dependence: a comparative study. *Journal of Child and Adolescent Substance Abuse* 15(1): 37-49.
- Seifert, J., U. Schneider, H. M. Emrich, and T. Passie. 2002. The pharmacology of psilocybin. *Addiction Biology* 7(4): 357-364.
- Shirota, O., W. Hakamata, and Y. Goda. 2003. Concise large-scale synthesis of psilocybin and psilocin, principal constituents of “Magic Mushroom.” *Journal of Natural Products* 66(6): 885-887.
- Stamets, P. 1996. Psilocybes from a Historical Perspective. *Psilocybin Mushrooms of the World* Chapter 1: 11-15. Berkeley: Ten Speed Press.
- Stamets, P. 1978. *Psilocybe Mushrooms and their allies*. Seattle: Homestead Press.
- Stamets, P., and J. S. Chilton. 1983. *The Mushroom Cultivator*. Olympia: Agarikon Press.
- Taylor, E. 1996. Psychedelics: the second coming. *Psychology Today* 29: 56-59.
- Tierney, J. 2010. Flashing Back to Hallucinogens. *The Oregonian* April 14: C1-C2. (From New York Times News Service).
- Wark, C., and J. F. Galliher. 2010. Timothy Leary, Richard Alpert (Ram Dass) and the changing definition of psilocybin. *International Journal of Drug Policy* 21(3): 234-239.
- Wasson, R. G. 1957. Seeking the Magic Mushroom. *Life* May 13, 1957: 100-120. ♣