

ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES

An Independent Journal Documenting Historical Data Pertaining To The Occurrence And Use Of the Neurotropic Species of Fungi. Featuring Ergot Fungi *Claviceps purpurea*, Fungi in Alchemy, The Muiscas of Colombia, the Soma Compendium, and much more.



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EDITED BY
JOHN W. ALLEN and PRAKITSIN SIHANONTH

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ABOUT THIS ISSUE

"John W. Allen has assembled some very important works on fungi, including some previously unpublished fact-finding data documents such as the 1908 historical timeline on Ergot from which LSD was originally synthesized, and his Compendium Part I on *Amanita muscaria*. The latter work provides researcher's, students and scholars alike, with a vast cornucopia of references on the academic and published literature of the history, use, chemistry, and pharmacological actions of *Amanita* species; as well as historical references of Soma and use of *Amanita* species in Siberia North America and ancient India, including a never before published paper of a fascinating report on an accidental inebriation of *Amanita pantherina* that occurred in Italy in 1956. From Colombia, a new hypothesis that suggests that the ancient Prehispanic Man-Bat shaman of the Muiscas of Colombia may have used psilocybian fungi in a cultic manner at the time of the conquest of Nueva España. Additionally, two other papers, one present a suggestion that the sclerotia (or 'philosopher's stone) from certain species of dung inhabiting fungi may have been known of by ancient and modern-day alchemists who may have used such sclerotia in potions related to witchcraft and magic for hundreds of centuries. Also presenting a new paper on Mazatec culture and some suggestions on the proper protocol and procedures for using psilocybian fungi as an adjacent to psychotherapeutic treatments on humans in contemporary society in manners similar to those employed by the Mazatec and other indigenous peoples of Mesoamerica as tools used in healing and curing ceremonies.. Over 265 pages, this issue is lavishly illustrated with beautiful photographs of several psilocybian species and graphic-designed art and mushroomic montages by John W. Allen. Additional photographs of species by Alan Rockefeller (California), Harry Regin (Germany), Jeremy Bigwood (Washington, D.C.), Arthur Brack and Tjakko Stijve (Switzerland), Michael Engström (Sweden), and George Wong of Oahu, Hawaii. As usual, I highly recommend it to anybody with an interest in entheogenic fungi and other psychoactives. Mr. Allen has done the work and has produced an essential guide for those interested in furthering their studies of the entheogenic fungi."

---David Tatelman, President, Homestead Book, Co. (Now retired).

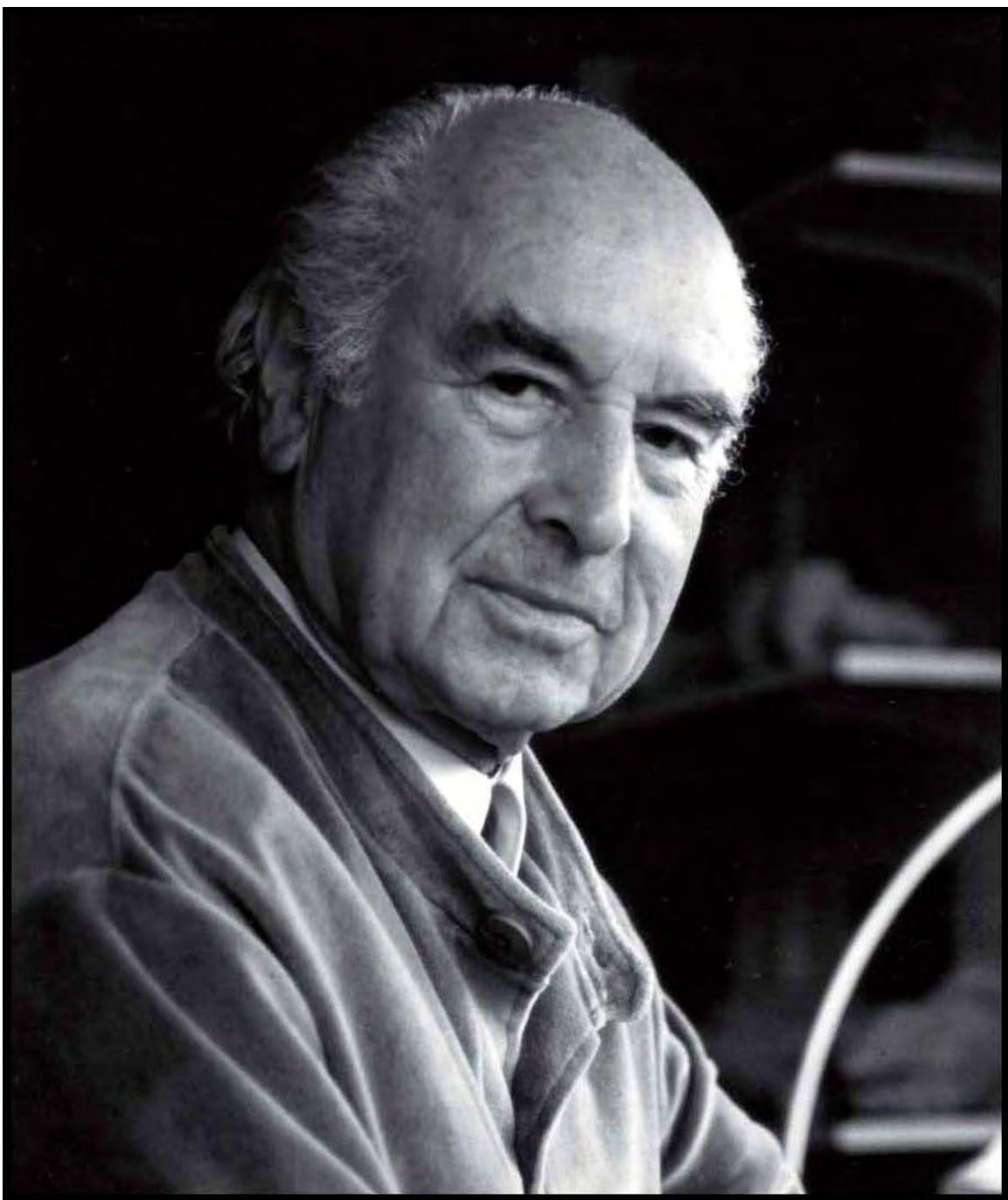
"Encyclopedically, overflowing with rare and valuable information; a treasure chest of exquisitely beautiful imagery and little-known information; this material is an absolute gold mind of scientific, artistic, and historic treasures. Much loved and most highly recommended!"

—David Jay Brown, author of *The New Science of Psychedelics*.

"John W. Allen has created another in his series of fungal monographs. This updates his previous material and adds additional material on ergot poisoning."

—Keeper Trout.

THE DISCOVERER AND FATHER OF LSD



Albert Hofmann. Photo by Rolfe Verres. Courtesy of Jon Hanna.

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Claviceps purpurea. Photograph courtesy of Tjakko Stijve.

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**Three original articles: Featuring From Ergot to Ernutin' and Allen's "Compendium if the
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Ergot, Ergotism and St. Anthony's Fire

A Precursor of LSD: From Babylon to Sandoz and Beyond



Photo: Courtesy of Tjakko Stijve. Switzerland.

Preface by William S. Burroughs

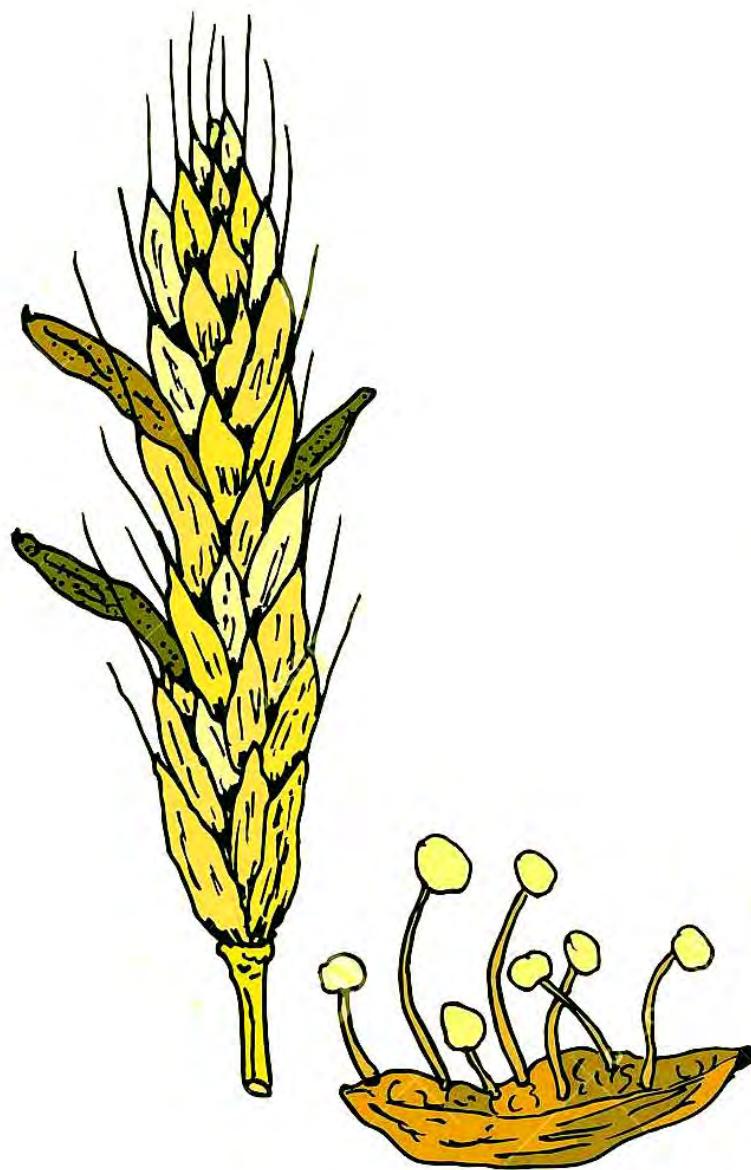
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Album botanical

Tab. CLXXX



Ergot
Claviceps purpurea

Ergot fungi, *Claviceps purpurea*, medicinal plant. Hand-drawn botanical Royalty-Free Vector Illustration.

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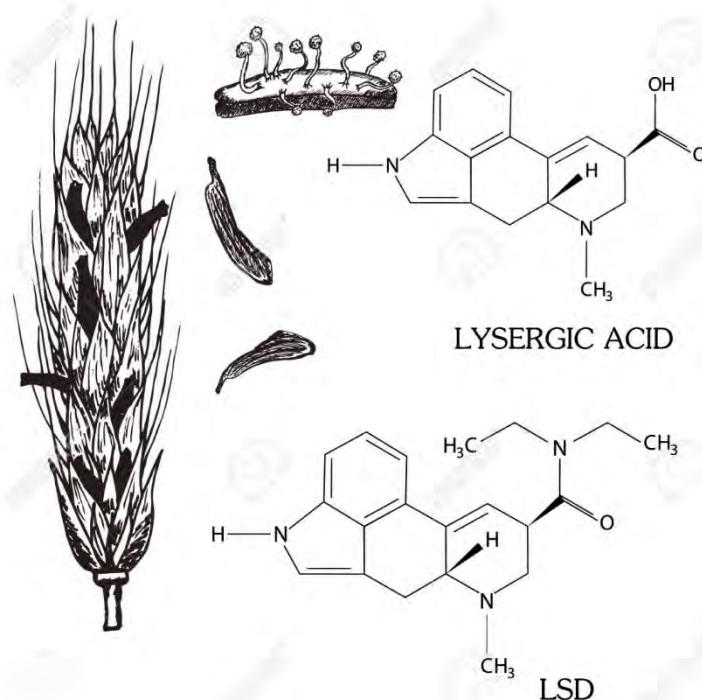
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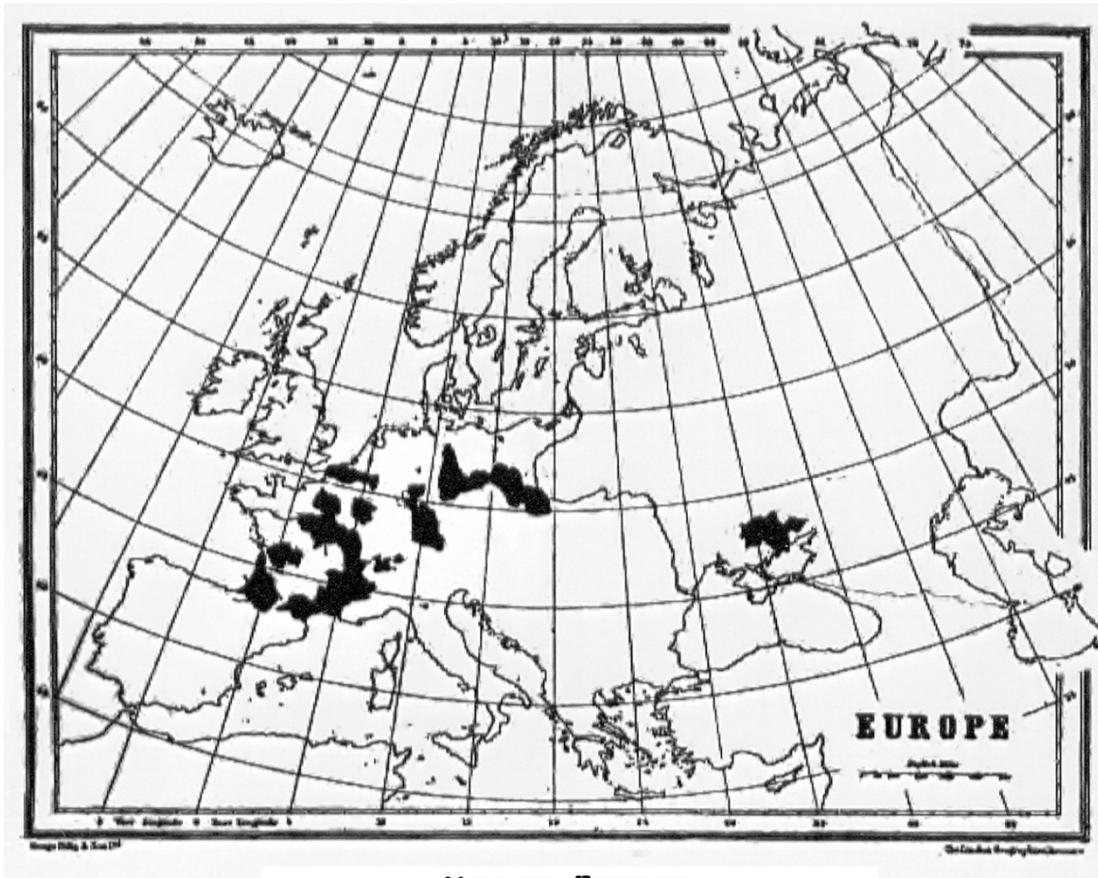
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The Chemical Structure of LSD and lysergic acid with the Spike of Rye Struck by Ergot.

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MAP OF EUROPE

Showing the districts where, according to ancient records, epidemics of ergotism occurred.

FRANCE

Artols, Paris, Lorraine, Côte-d'Or, Sologne, Burgundy, Lyons, Dauphiné, Périgord, Limousin, Angoumois, Landes, Aquitaine, Languedoc.

SWITZERLAND

Zurich, Berne, Lucerne.

BELGIUM

Flanders, Namur.

GERMANY

Marburg, Hesse, Freiburg, Würtemberg, Bohemia, Silesia, Lusatia, Vogtland.

RUSSIA

Ekaterinoslav, Kieff, Tomsk, Poltava.

SWEDEN

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Preface By William S. Welcome

For many years I have been engaged in researches respecting the early methods employed in the healing arts, both amongst civilized and uncivilized peoples. It has been my object, in particular, to trace the origin of the use of remedial agents. Why were certain substances used in treatment of various diseases? Was their adoption the result of study and practical observation or was it more usually the result of accident? Were the alleged virtues purely imaginary and due to superstitious suggestion? A consideration of such questions is always of interest, and sometimes adds to our knowledge.

There is considerable amount information scattered throughout the world in folk-lore, early manuscripts, and printed books, but the difficulties of tracing out and sifting the evidence are considerable. I anticipate that the historical exhibition of medical, chemical and pharmaceutical objects which I am organizing, to be held in London (Eng.), will lead to the revealing of many facts, and the elucidation of many obscure points, in connection with the origins of various medicines.

I should greatly value any information sent me in regard to medical traditions or references to ancient treatment in manuscripts, printed works, etc.; even though the items be ever so small, they may form important connecting links in the chain of medical evidence.

It is my intention ultimately to place before the profession, in a collected form, all the information I obtain.

I should be glad to receive any information respecting the early history of ergot and egotism, also references to the use of ergot as a medicinal agent in ancient times.

Being engaged on a further and more exhaustive investigation of this interesting drug, any notes on the subject would be greatly appreciated.
[signed] Henry S. Welcome.

From Ergot to Ernuthin'



Photos courtesy of Tjakko Stijve, Vevey, Switzerland.

FROM ERGOT TO'ERNUTIN' AN HISTORICAL SKETCH

There are few more striking examples of the debt mankind owes to medical science than that instanced in the history of ergot. From a period of remote antiquity, it is now known to have been the cause of a terrible scourge that swept away many thousands of persons, but, within the last century and a half [beginning from 1758 to 1908], science has robbed it of its terrors, and has transformed it into a medial agent of great value in alleviating human suffering.

Ergot is a peculiar form of the fungus *Claviceps purpurea* Tul., being the Sclerotium, or, as termed in the British Pharmacopoeia, the compact mycelium or spawn which is developed in the ovaries of certain kinds of grasses. It is now obtained almost exclusively from rye (*Secale cereale*, L.), but the same or similar fungus is produced in grasses belonging to many other genera.

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The first sign of the formation of ergot on the rye is a white mold which settles on the bloom, and which is caused by the germination of the spores that have been carried by the wind on to the flowers. This mould penetrates the ovary, covering the pericarp with a soft, felt-like mass, and at the same time, a viscid substance called "honey-dew" is secreted, in each drop of which, when inspected under the microscope a nest of conidia can be observed. These nests form into strings, and thus new masses (sphacelia) are produced. At this season, when germination takes place, there is on the ground, a small weevil, cantharis, *S Ragonucha Lelanuva fabricius*, which feeds on the honey-dew. By means of their legs and suckers they carry the conidia from one ear to another, and are thus the agents in infecting whole fields and districts. The fungus gradually develops and, by the month of June, a long, black, triangular "horn" grows out of the ear of the rye, sometimes as many as ten horns being found in one ear. This horn is the sclerotium, or final stage, in the development of the fungus.



THE BOTANICAL HISTORY OF ERGOT

The word ergot is derived from the French "argot," "the spur of a cock," which the fungus is supposed to resemble. It has been known throughout the countries of Europe by various names, derived either from its form, origin or qualities. In France it was known as ergot, argot, bled avorte, bled cornu, bled farouche, or rachitique, calcar, chambucle, clavus, siliginis, clou de seigle, ebrun, faux seigle, mane, mere de seigle, secalis mater, seigle cornu or corrompu, seigle à eperon or ergotisé seigle, ivre, seigle noir, secale cornutum, mater segalis and orga. In Germany, it was generally called Mutterkorn, Hamelkorn, or Rockenmutter, and in England it was known as "spurred rye" or "horned rye."

Rye was one of the cereals indigenous to the Euphrates valley, and was called by the Chaldeans *Zennu*, but no mention of it occurs in the tablets at present known until about 1200 B.C.

In an inscription to Gudea, on a Babylonian tablet, said to date from 2500 B. C., mention is made of "the women who gather noxious grasses, and who were expelled from the city with exorcists and mutterers of charms."

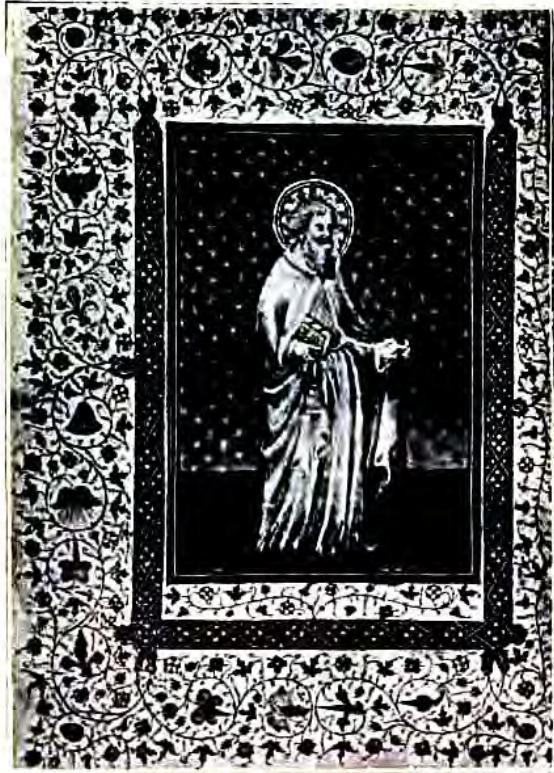
On an Assyrian tablet, about 660 B.C., allusion is made to a "noxious pustule in the ear of grain," which may also refer to ergot.

In the *Yasna* part of the *Zend Avesta*, the sacred book of the Parsees, which is suppose to date form 400 B.C. to 300 B. C., there occurs the following passage: "Among the evil things created by Angro Maynes are noxious grasses that cause women to drop the womb and die in child-bed." There is little doubt this alluded to the ergotted grasses which grow commonly in the East.

The earliest allusion to ergot is said to be in the works of Theophrastus (372-288 B. C.), who terms it *luxurias vegetum*. Pliny (A.D. 23-79) also mentions a disease which attacked corn in moist places, which may probably refer to ergot.

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Galen (A.D. 130), in his work *De Facultatibus*, appears to have been aware of the danger of using diseased grain for food, and it is probable that this vitiation of grain has existed from time immemorial.



St. Antony

Patriarch of the monks. His relics are said to have miraculously healed many sufferers from the "holy fire," which from the 11th Century was known as St. Antony's Fire. He is depicted as standing in a flaming fire, symbolic of the disease with which his name was associated, and carries his staff or crutch.

From an MS, of the XV Century

The first clear account of ergot and poisonous properties is given by the Perso-Arabic physician, Abu Mausur Muwaffak (A. D. 950), and, according to Mezeray, the toxic effects of spurred rye, when mixed with aliment, were also recognized by Sigebert de Gremblour in 1096, who observed that an epidemic followed the consumption of damaged crops. In Syria, ergot appears to have been employed in folk-medicine from a period of antiquity, and was known by the curious but suggestive name of "Daughter of blood." Adam

Lonicer, of Frankfort, is the next who makes mention of ergot; in 1582 he describes its appearance in the ears of rye, and, alluding to its medicinal effects, states, "It is regarded by women to be of remarkable and certain efficacy."

It is also clearly described in the writings of Johannes Thallius, in 1588, who states, "In Thuringia this kind of blemish is commonly called mother of rye, rockenmutter. (They use it also to stop bleeding.) I state that I observed the same kind of blemish in the year LXXV. For I found certain mountains of Stolberg many ears of this containing not only one long, black, faulty grain of this kind, but many of them, most of them being curved in the shape of horns. At the time of florescence that year there were very heavy rains, and afterwards there came a period of very hot sunshine. Moreover, if anyone will carefully examine a single ear, the difference between the greater and lesser can easily be distinguished."

In 1623, Caspar Bauhin, alluding to ergot, cites Pliny's reference, and calls it *Secale luxurians*, while John Ray, the English botanist, in his *Historia Plantarum*, published in 1693, repeats Bauhin's description in the following words:--

"During frequent rains the lower grains of the ears of rye, when ripening, become blackish-purple. Certain seeds are pushed a long way out of their

husks or clumæ, and grow rather thick. Some of them are curved into horns, which all become black on the outside, but inside contain thick, white flour. And the farinaceous substance, possessing the flavor of malt, is known by the Norici as *Mutterkorn*, i.e., mother of corn, and is considered an excellent remedy for *Lochiorum fluxum*. This kind of faulty rye is called by C. Bauhin, *Secale luxurians*, and by Lonicerus, *Clavi siliquinis*. Whether these excrescences owe their origin to holes made by insects of some kind remains to be discovered."

This description is especially interesting as showing the knowledge of ergot and its medicinal properties at the close of the seventeenth century.

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Ergot was at first regarded as a complete fungus by De Candolle, in 1816, who called it *Sclerotium clavus*. The process of the formation of ergot and its nature was first scientifically studied and investigated by Villenueve, in 1827, who described the spurred rye as follows: "The rye grain infected by the ergot fungus is first soft and pulpy; it soon emerges from the husk, becomes firm and lengthy, and of a reddish colour, which is often very rapid, sometimes is such that the affected grain is very often out of all proportion to the rest of the ear."



The earliest known representation of Ergot of Rye (Hamelkorn). From a woodcut circa 1578. [Editors note: Hamelkorn means hamel Grain].

In 1838, Quekett read a paper before the Linnæan Society, on "Ergot of Rye," in which he traced the growth of ergot throughout its several phases. From his investigations, he concluded that ergot was a mass composed of the constituents of the diseased grain mixed with fungic matter, occupying the place of the healthy ovary. The researches of Tulasne, in

1853, were very complete and exhaustive, and these, supplemented by St. Wilson and Luerssen, practically determined our present botanical knowledge of ergot.

Tulasne showed that the fungus *Claviceps*, the mould *Sphacelia*, and spurred rye, were all different stages of the same plant. He states, "I found that the dark purplish-brown spur-shaped grains were the food-store of a fungus to which they bear a relation similar to that between the potato and the potato plant. In autumn, they fall to the ground, where they are protected from birds by their bitter taste and their colour resembling that of the soil. In spring, there arise from each 20 to 30 beautiful little pale violet fungi, the shape of round-headed pins, in the tops of which are a great number of flask-like cavities, filled with several dozen long hollowed cells or bags, each of which contain eight slender spores; they proceed to grow out through the bags and flasks, and are then blown away by the wind. A few happen to stick in the honey-dew secreted by the flowers of the grasses and grain, whereupon, particularly if they happen to fall upon the flowers of rye, they grow rapidly. Insects are thus attracted, and spores which were in them are carried to other plants.

"At the same time, the hypha penetrates the young rye grain and forms a network of dirty white fibrils outside it, throwing off fresh spores and honey-dew; the other part continues to run riot in the ovary of the rye, finally forming a compact mass of fibers; the outer layers condense into a hard purplish epidermis, and the spur is complete."

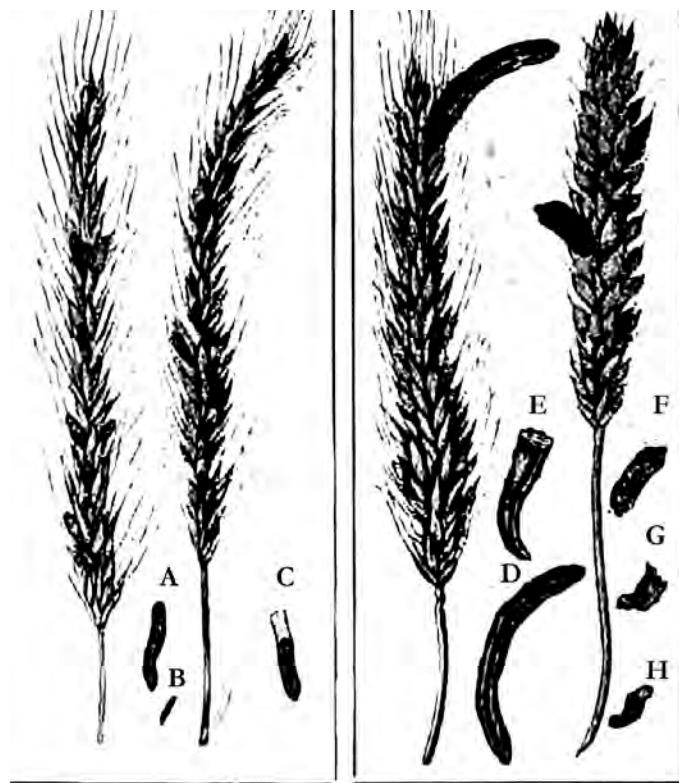
ERGOT AND ERGOTISM

The close of the seventeenth century saw the dawn of a new and important epoch in the history of ergot, when it first became seriously recognized as the cause of a pestilent disease which had ravaged the human race from the early ages. This malady, which is variously termed *ignis sacer* ("holy fire"), *ignis infernalis* ("Devil's fire"), St. Anthony's fire and St. Martial's fire, is now known to have been due to the ingestion of ergotism grain, and therefore to have represented forms of the grain intoxication called ergotism.

From various records this disease appears to have occurred in two distinct forms, namely, the gangrenous and the convulsant. The gangrenous

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form of ergotism, in which the circulatory symptoms are most noticeable, has been the prevalent type of the pestilence in many epidemics. The convulsant form, where the nervous system is chiefly affected, has not attracted no attention from historians. These two forms have generally raged over distinct areas, the type of symptoms remaining constant. The difference in symptoms noted in various epidemics is explained by the composition of the ergot, which, as will be shown later, may contain varying proportions of certain constituents.



ERGOT OF RYE-From a woodcut, 1682.

Fig. 1. Ear of rye containing ergot.

A-Middle sized ergot detached.

B-Small ergot detached.

Fig. 2. Ear containing grains composed of rye and ergot.

C, Grain composed of rye and ergot.

Hippocrates, in his works, describes certain epidemics suggestive of ergot poisoning, particularly in his account of an epidemic which occurred in the years 347-346 B. C.; but, unfortunately, it is impossible to exactly identify the disease which the early Greeks and Romans called *ignis sacer*, or "holy fire,"

According to Fuchs, the ancient Greeks used the words "holy fire" to indicate several maladies, and the expression probably meant that these diseases were accompanied by burning pains, or that perhaps spread rapidly like a fire.

There seems to be little doubt that the malady termed *ignis sacer*, by Celsus, was really acute eczema, and that descriptions given by Virgil and Columella under the name referred to anthrax.



Fig. 1 Ovary of a young grain of rye

- a. Ovary crowned with hairs
- b. Feathery stigmas
- c. Place of the embryo
- d. Scales
- e. Paleae
- f. Receptacle to which grain is attached

- Fig. 2** Grain of rye matured, retaining the remains of the stigma and hairy crown

Fig. 3 Shows position of paleae

Fig. 4 First appearance of growth of ergot in young grain

- a. Ovary overrun with fungus
- b. Fungus has cemented anthers and stigmas together
- c. Scales separated
- d. Receptacle

Fig. 5 Depicts the ergot now grown to show itself just without the paleae

- e. Ergot beginning to turn purplish-black
- f. Scales spread open

The early Arabian writers allude to a disease called "Nar-Farsi" or "Ateshi-Farsi" (Persian Fire); but those names are ascribed by Rhases, Avicenna and Albucasis to anthrax, measles, and sometimes to smallpox. The grievous disease which, at a later date, was known as St. Anthony's fire, or St. Martial's fire, and which was probably regarded, even by physicians as erysipelas is now known to

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have been one of the many forms of ergotism.

The occurrence of ergotism in epidemic form can be traced back to France with some degree of possibility as far as A. D. 857.

An interesting record of the disease is to be found in the annals of the Convent of Xanten on the Rhine, which dates from the ninth century. One hundred years later, the people of Paris were flocking to the holy churches to pray for the cure of their sufferings from the "holy fire," and in the same century, A. D. 944, it is recorded by Mezeray that a terrible outbreak of the disease called *mal de ardents*, or "holy fire," broke out in Aquitaine, Limosine, Pèrigord and Angoumois, of which 40,000 persons died. The Clergy received rich donations for their intercession. It is noted, however, that the priests themselves were sometimes attacked, since the people paid their tithes in bulky ergotised grain.

"The cries of the sufferers were piteous," says the chronicler, "the stench of their limbs intolerable, and many were carried off in the night." Adhemar, a novice in a monastery in Angoulême, relates the same story in his chronicle. He states that the fire of the plague was noticed all over Limousine, and that a very large number of persons were afflicted by this disease which he calls *ignis occultus*, or "hidden fire," which, having affected a limb, separated it from the body, after having burnt it; and "the burning of their fire," he states, "consumed many in one night."

Felibien, a chronicler of the tenth century, also records that during an outbreak of *ignis sacer*, according to a charter from Notre-Dame de Paris, "it was established that six lamps were to be lighted in the place where the patients were," from which it would appear that the sufferers were placed in some kind of special hospital.

It is recorded in the history of Metz, that in the year 1001, a terrible plague raged in that city, which the chronicler called "*mal de ardents*; a so terrible disease that several lost their arms and legs." Again in 1039, we learned that "a deadly burning

destroyed many, both rich and poor, and left others, for example, mutilated of their limbs. There was at the same time great scarcity of corn and wine."

Sigebert gives some interesting particulars about an epidemic in 1089, which he witnessed. "In lower Lorraine," he states, "a great number of people were afflicted by a gruesome disease which caused their limbs to become black as coal, and from which the patients died miserably, or were reduced to an unhappy life, having lost hands and feet."



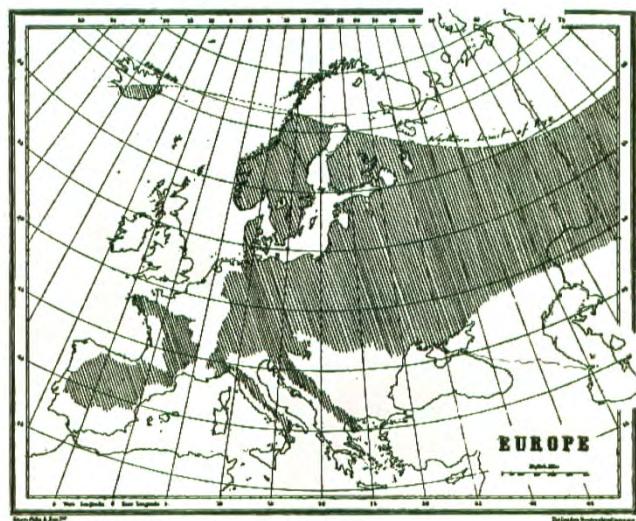
Ergot of Rye
Showing the ergot in various stages of development.
From an engraving. 1838

Mezeray reports an outbreak in the year 1090, and for the first time alludes to the disease by the name

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of St. Anthony's fire. He further notes the fact that in 1096, in the province of Namur, the bread, after being baked, appeared as red as blood. "This," he observes, "may be caused by a kind of false corn, which gives this colour to bread."

Altogether, six great outbreaks are recorded in the tenth century, seven in the eleventh, ten in the twelfth, three in the thirteenth, the mediæval series ending with one in the year 1373.



MAP OF EUROPE

Showing countries in which rye is cultivated. The shaded portions show the localities where rye is mostly grown and used as food.

ICELAND	TURKEY
NORWAY	GERMANY
SWEDEN	SWITZERLAND
FINLAND	ITALY
RUSSIA	DENMARK
POLAND	FRANCE
AUSTRIA	SPAIN
BOSNIA	PORTUGAL

This malady was of a nature to attract notice and to excite pity, and is frequently mentioned in the early French legends of the Saints. From the tenth to the twelfth century the term *ignis sacer* is generally used by chroniclers in referring to the epidemic, but after that period the names of "St. Anthony's fire" or "St. Martial's fire" are mostly employed.

Several Saints appear to have been especially connected with *ignis sacer*, and after the eleventh

century their names seem to have been directly associated with the disease. This association probably originated in their acts of personal healing, or in the professed efficacy of their relics in relieving the sufferers. St. Martial appears to have been the first to perform miracles of healing from this malady. He was one of the earliest apostles of France, whither he was sent from Rome with St. Dionysius, of Paris, about the year 250. He afterwards became the first Bishop of Limoges, where, on his death, his relics were religiously preserved.



SAINT ANTHONY

The Saint is depicted standing in a flaming fire, symbolic of the disease his name was associated.

From an MS of the XV Century.

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It is recorded that during the first epidemic of the "holy fire," in Aquitaine the bishop carried the relics of St. Martial in procession. "When indeed," says the chronicler, "the plague ceased at once." It may be remarked that the procession took place late in the spring, at which season the poisonous properties of ergot became attenuated.

St. Anthony, who was associated with the disease which was afterwards known as St. Anthony's fire, was the patriarch of the monks. His identification with the malady began, according to an ancient chronicler, in the year 1050, "when pestilential erysipelas distemper, called the "holy fire," swept off great numbers in most of the provinces in France. Public prayers and processions were ordered against the scourge, and those who implored the Divine mercy through the intercession of St. Anthony, especially before his relics, were speedy and miraculously healed. The church in which the relics were deposited was that of La Motte of St. Didier, situated not far from Vienne, which was resorted to by great numbers of pilgrims, and the Saint's patronage came to be implored throughout the whole country against the disease, since which time it ceased, and was known thereafter as St. Anthony's fire."

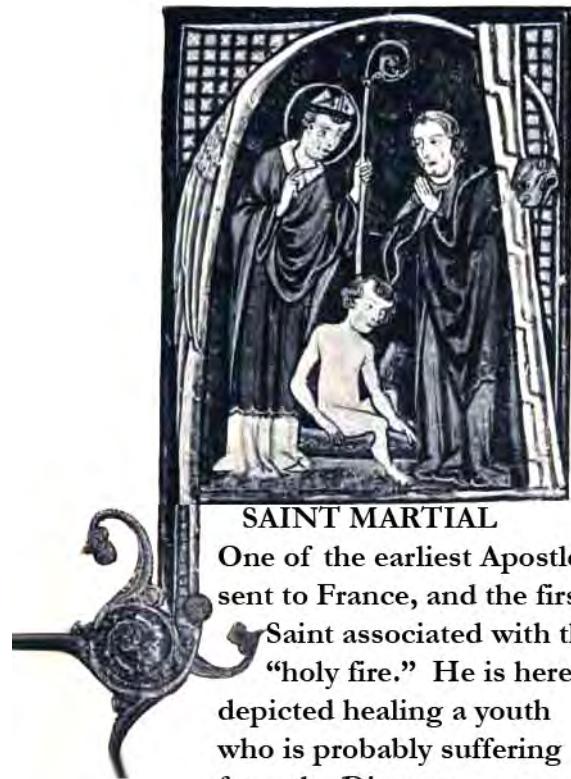
The story of how St. Anthony's relics were brought to Vienne, and how the Order of the Hospitallers of St. Anthony came to be founded, is related by Aymar Falco, the historian, and is not without interest. He states that when St. Anthony died, it was his wish that his burial-place should remain secret, and it was not until 170 years after his death that the place of his internment became known. He was found wrapped in a tunic, the material of which was quite different from ordinary stuff. There is no doubt that it was the garment which formally belonged to the Hermit Paul. The remains so happily discovered were taken with great ceremony to Alexandria, and placed in the church of St. John the Baptist.

A century later the invasion of the Saracens forced the Christians to remove the relics they possessed to different countries to protect them from the profanations of their enemies. The body of St.

Anthony was taken to Constantinople and placed in an old church at the gates of the city.

About this time a certain Jocelyn, a nobleman of Dauphiné, had vowed a pilgrimage to Jerusalem, but instead of going, occupied himself in the petty feuds common among the feudal lords of the period.

One day, being severely wounded in a fight, he was carried for dead to a chapel of St. Antony and, reviving next morning, said he had a vision of demons, one of whom tried to strangle him, while the rest stood ready to drag his soul to hell; but St. Antony appeared and, having driven away the devils, bade him at once fulfil his vow and, on his return, bring his relics to France, where they would receive greater honour than at Constantinople.



SAINT MARTIAL

One of the earliest Apostles sent to France, and the first Saint associated with the "holy fire." He is here depicted healing a youth who is probably suffering from the Disease.

From an MS of the XIV century.

This he succeeded in doing (A. D. 1090), and was building a church for their reception at St. Didier la Motte, near Arles, when he died childless, and his

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estates passed to a relative, Guy Didier, who carried the relics about with him for the protection they brought him in battle. Pope Urban II heard of this in 1095, and, much scandalized at such indecency, ordered Guy to finish the church at once on pain of excommunication, and meanwhile to put the relics in charge of the Benedictines at the neighboring Abbey of Mont-Majour. To this he consented, and the monks established a priory there, and the shrine rapidly became famous for the cure of diseases, especially ergotism.

Amongst others came a rich man named Gaston, to pray for his son, who was sick. St. Antony is said to have appeared to him in a dream, and, after rebuking him for being more anxious about his son's body than his soul said that God would grant his prayer, but required them both to devote themselves and their wealth to the service of the sick. Planting his staff in the ground, St. Antony bade him and his future companions to wear a blue cross shaped like its head on the letter T, on their shoulder. Thus were the Hospitallers of St. Antony founded, and this became their badge, and probably represents the crutch used by mutilated victims of ergotism.

Gaston and his son, who were soon joined by others, built a hospital near the church for the reception of sick pilgrims, styling themselves Hospitallers. The community was recognized by Pope urban in the same year, 1095, and may therefore claim to be the earliest of the Hospitallers Orders.

The second Grandmaster, Stephen (A. D. 1120), built a larger hospital owing to the increased number of patients. The Order of St. Antony grew rapidly, and spread through France, Germany and Scandinavia, and acquired great wealth. The parent house was engaged in active work as late as the sixteenth century, providing food for the still numerous victims of ergotism, and affording surgical aid to the maimed who were incapable of self-support.

In the eleventh and twelfth centuries, it was generally believed that if the sufferers from the

"holy fire" could but reach the Abbey of St. Antony at Vienne, and remain there for about a week, they would be cured. Thus pilgrims made their way to Vienne from all parts of Europe, many of them, indeed, actually leaving their limbs there. Writing

as late as 1702, a chronicler states, "one can still see in this abbey dried and blackened limbs kept from that time."

In all probability, the epidemics of ergotism at this period were of the gangrenous type, below is a woodcut of the sixteenth century, represented on that depicts the Adoration of St. Antony by a sufferer who has lost his right foot, and who raises towards the Saint his left hand, which is represented as burning with a living flame. Beneath the original picture are the following lines:--

*"Oh Lord Great St. Antony,
Procure us by thy sovereign grace,
The pity of god, and pardon of our sin
Preserve us from this terrible fire."*

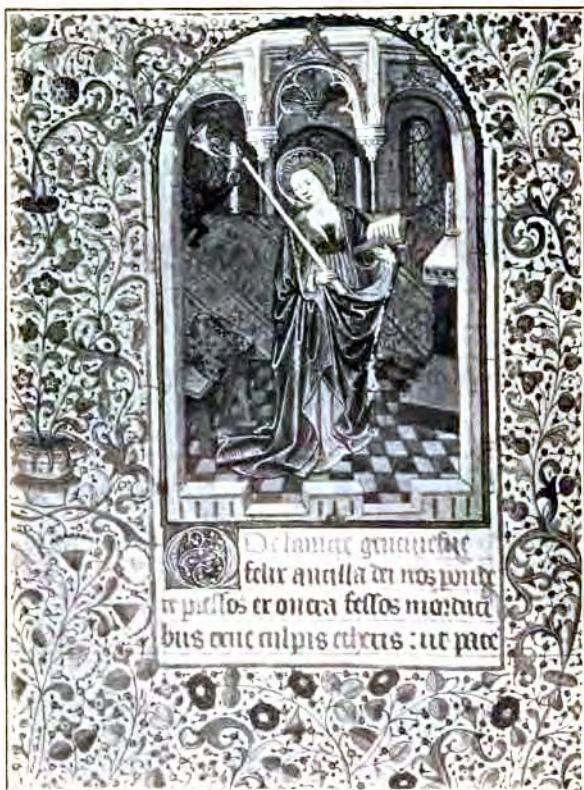


The adoration of Saint Antony by a sufferer of
Ignis Sacer (gangrenous ergotism).
From a woodcut of a XVI century.

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It is further interesting to note that the lambent flame and the crutch are used as symbols of St. Antony, and are represented in many pictures of him executed by the monks in the Middle Ages. In other miniatures he is depicted as standing in a flaming fire.

Tradition states that St. Benedict was associated with this malady. He was the Abbot and founder of the famous Abbey of Monte Casino, and was the patriarch of the Western monks. After his death his relics were visited by pilgrims suffering from the "holy fire," from which they claimed to obtain relief.



SAINT GENEVIÈVE

Chief patroness of the city of Paris. Many sufferers from the "holy fire" are said to have been healed by touching her shrine.
From an MS of the XV century.

Ste. Geneviève, who was also connected with the disease, was the chief patroness of the city of Paris. She was born in the year 422 at Nanterre, a small village four miles from that city, and died about 512

being buried in the Church of St. Peter and St. Paul.

The city of Paris is said to have frequently received proofs of Divine protection through her intercession, the most famous instance being the miracle of "*les ardents*." Or the "burning fever." In 1129, in the reign of Louis VI., it is stated that "a pestilential fever, with a violent heat and pains in the bowels, swept off in a short time 14,000 persons; nor could the art of the physicians afford any relief. Stephen, Bishop of Paris, with the clergy and people, implored the Divine mercy by fasting; yet the distemper did not abate till the shrine of Ste. Geneviève was carried in a solemn procession to the cathedral. During that ceremony many sick persons were cured by touching the shrine and of all that then lay ill of distemper in the whole city only three died; the rest recovered, and no others fell ill."

A chapel near the cathedral, called antiently Ste. Geneviève the Little, erected near the house in which she died, was afterwards called, from this miracle, Ste. Geneviève des Ardents.

The scourge of the "holy fire" was most virulent at the time of the Crusades, toward the end of the eleventh and twelfth centuries. Dauphiné was so smitten that Pope Urban the Second founded several hospitals of the Order of St. Antony in France.

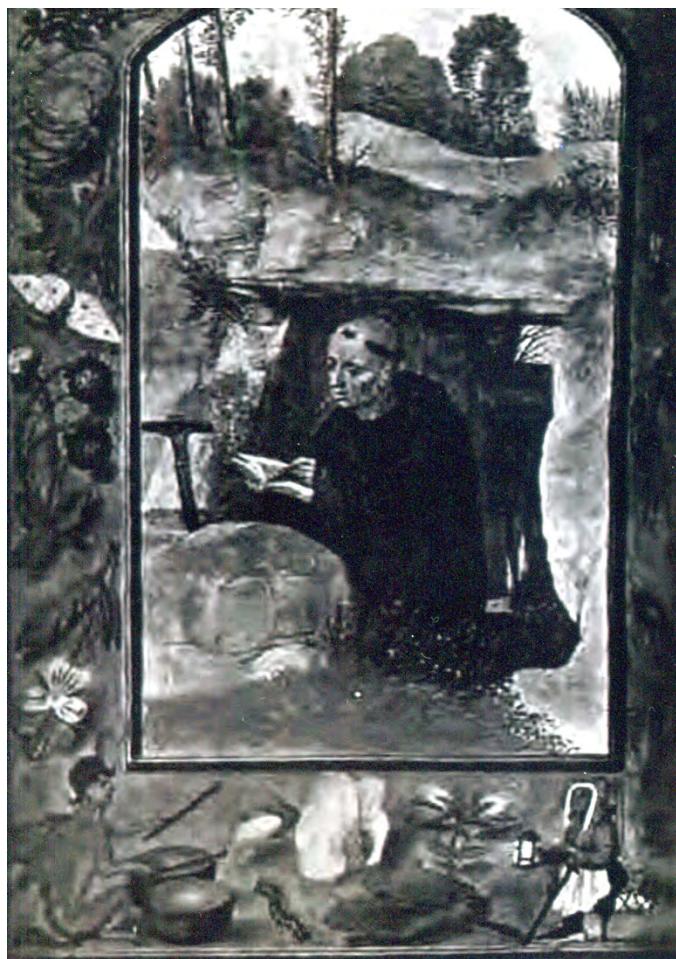
Rabelais, who alludes to "St. Antony's fire" at the end of his introduction to Book II of his works, swears that his chronicles are the expression of truth, and threatens incredulous readers with numerous terrible diseases. He terminates his imprecations on the unbeliever with the following characteristic sentence:--

"May St. Antony's fire burn you, mauditerre return to you, Lancy and malubec afflict you; may you get caquesangue and ricqueracque, fire as fine as cowhair, with quicksilver in the foundation and as Sodom and Gomorrah, may you fall into Sulphur and fire, and in the depths, if you do not firmly believe all that I want to relate in this present chronicle."

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He further states that at Lyons the doors of the houses in which the sufferers lived were painted red, emblematic of the fiery nature of the disease.

Ambrose Parè refers to "holy fire" as erysipelas, and says that the people called gangrene "St. Anthony's fire" or "St. Martial's fire." Germany, Flanders, Burgundy, Denmark, and other countries suffered terribly from these epidemics of ergotism, but England only slightly.



SAINT BENEDICT

Abbot and founder of Monte Casino, whose relics were believed to heal those afflicted with the "holy fire." A watchman who has probably been crippled through ergotism is depicted in Border. From an MS, of the XV century.

The English epidemic is described as an "epidemic erysipelas whereof many died, the parts being black

and shriveled up." Hugh of Lincoln (A. D. 1190) is said by his chronicler to have seen many who recovered from the fire at Mont. St. Antoine in Dauphiné. "They were of all ages, and although terribly crippled, their health was, nevertheless, restored. Some lacked a forearm, others a leg, or even a leg and thigh up to the groin, but all their stumps were soundly healed." And so throughout the thirteenth, fourteenth and fifteenth centuries we have the same melancholy tale of the effects of this terrible scourge.

It was even noted that the disease was most destructive in the years of bad harvest and in times of famine, but no one connected the grain with the disease.

Many curious remedies were employed in the Middle Ages as cures for "St. Antony's fire" by those who had not sufficient faith in the sacred relics. A Danish manuscript of the fourteenth century gives the following recipe:--

"Against erysipelas.

"It is the "bad fire" of bad blood. Take some hermodactyl, bones of the hen and salt. Put together in a mortar and powder. Then wash the place of the irritation with strong vinegar and cover it with the powder. Take, too, a piece of malva, and boil the bark during two or three days. Take afterwards some earth from a molehill, and fill up the hole with all that, in order to let the flesh grow near the ulcer. After all this has been done, cover the limb to let it perspire, and the limb which falls must be placed in the sun or in the fire."

In another medical manuscript of the thirteenth century:--

"Of the plantain, his moisture is good, too, for fire in the ears and for 'bad fire.'

"Wormwood. If the leaves be cooked with oil, it is good against 'bad fire' and against what is burnt.

Cypress mixed with barley flour and vinegar is good against 'bad fire.'

In a medical manuscript dated 1534, is the following recipe for "bad and wild fire":--

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"If someone gets or suffers from the wild or 'bad fire,' which is called by many people St. Antony's fire, let him take some sorrel and crush it into small pieces, for the juice appeases the warmth, and cures. He must drink the juice; and also the water boiled with this sorrel appeases very well the warmth and eternal fire.

"Take the leaves and bark of the young plum tree. Crush it in small pieces and make a plaster for the seat of the disease.

"Take the bark from the middle of the young oak, and some acorns or green acorns. Let them boil in vinegar, or water, and make with it a plaster for the same fire. This extinguishes it, and cures.

"Take some loriandre, crush it in small pieces, and make wit it a plaster for the sore place, for it is very good.

"Take the root of the white lily. Roast and crush it with essence of rose, and make a plaster. On the fire and warmth let this plaster stay a long time, for it cures and is very useful. You can take also the root of the grass called 'devil-bit.' Crush it in small pieces, and place it on the same fire. It extinguishes well. You can crush the leaves of the poppy with vinegar, and then place it on the part. It cures and extinguishes very well."

The same writer adds:—"If the limb of a person is inflamed with evil fire, which many persons call St. Antony's fire, let him plunge a towel into water of ripwort or plantain, for it extinguishes very well."

In the vocabulary of the manuscript *ignis sacer* is described as "a disease called 'evil fire,'"

The estimates of mortality in the several epidemics of ergotism over a larger or smaller area of France range as high as forty thousand and fourteen thousand, which, however, must be taken as an approximate. But in later times, upwards of five hundred deaths from ergotism have been accurately counted in a single outbreak within a limited district. The epidemics were observed to occur in particular seasons, sometimes twenty years or more

elapsing before there was a recrudescence of the disease. Certain provinces were also found to be more frequently visited, notably those in the basin of the Loire, in Lorraine, and since mediæval times, especially, in the Sologne.

The disease was almost exclusively confined to the peasantry, and children in particular were affected. The attack usually began with intense pains in the legs or feet, causing the victims to writhe and scream. A fire seemed to burn between the flesh and the bones, and at a later stage even in the bowels, the surface of the body being all the while cold as ice. Sometimes the skin of affected limbs became livid or black; now and then large blisters arose upon it, as in severe attacks of erysipelas. Gangrene of the extremities followed. A foot or a hand fell off, or the flesh of a whole limb was destroyed down to the bones by a process which began in the deeper tissues. The spontaneous se[parathion of a gangrenous hand or foot was, on the whole, a good sign of recovery for the patient.

Such was the *ignis sacer* ("holy fire"), St. Martial's fire or St. Antony's fire, which figures so prominently, and of which so many epidemics are recorded in the French Mediæval chronicles.

The first suggestion that ergot was probably the cause of these epidemics was made in the year 1596, when a disease accompanied by spasms and convulsions broke out in Hesse and the neighbouring district. The Medical Faculty of Marburg, on careful examination of all likely causes, were at length led to attribute the malady to the use of spurred rye, and in 1597 they published a tract on this subject, describing the symptoms, causes and methods of cure.

Sennertus, who seemed to have derived his information from the Marburg report, gives the following particulars in his work on fevers: "Those who were seized with the disease scarcely ever recovered. Those who were disordered in their intellect remained so until their death. Although some lived for fifteen years after being attacked with this disorder, yet every year in the months of January and February they found themselves ill."

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Thuillier, a physician to the Duke of Sully, was the first to call attention to the fact that ergot, or spurred rye was accountable for the disease which had so devastated some parts of France in 1630. He observed that the intensity of the malady, was in proportion to the amount of the vitiated grain consumed, and that the rye became spurred in damp and cold seasons. He proved the toxicity of ergot by experiments on lower animals, including birds; and his description, the result of his observation and experimentation, is stated to be "the first scientific observation free from all superstition."

Thus a great advance was made towards solving the mystery as to the cause of the epidemics.

Hoffmann states that St. Antony's fire was very prevalent in Voightland during the years 1648, 1649 and 1675; and in 1660, 1670 and in 1674, it again ravaged some parts of Aquitaine, the Sologne and the district of Gâtinais.

In 1670, the Academy of Sciences in Paris, was informed of the singular effects attributed to the use of bread made from spurred rye, which had been noted in the Sologne; and six years later, Dodart was commissioned to investigate the nature of the disease caused by ergot. In addition to other observations, he concluded that ergot was most active when it was new, and lost much of its virulence as it grew stale. He also described the symptoms of the disease with considerable accuracy.

In 1682, Dr. Bernier, a physician who had practiced at Blois for twenty-eight years, published, in the *Journal des Scavans*, a short history of that city. After describing the Sologne, he refers to a "malignity which sometimes spreads itself all over the rye of this country, and which, breeding in the ears of corn certain black grains called in Sologne ergots, and in Gâtinais, *bled cornu*, does often cause dangerous diseases to the people of the country. But it is not certain that this proceeds from the soil or from the heat and moisture of the air, as was formerly said, but rather from some certain hoar frosts which fall some years, and always towards the month of May."

About the same period, the Abbé Tessier, noticed that the conditions preceding an outbreak of the disease were generally the same. (1) The district was damp and foggy; (2) the vegetable products were badly nourished and small; (3) the people were in bad health and reduced to want.

In 1709, an epidemic of ergotism swept over the cantons of Berne, Lucerne and Zurich, and an accurate account of the disease was recorded by Lange, who made careful experiments with the diseased grain. He found that it abounded mostly in rainy years, and when a hot summer followed a wet spring. He speaks of the excruciating pain which preceded and accompanied the gangrene, and traces the disease to ergot, which he calls "*clavis seccalinus*."

The epidemic in Switzerland spread to Dauphiné and Languedoc, and an account of it is recorded in the archives of the Abbey of St. Antoine at Vienne. It describes how the unfortunate victims were tortured for six months or more before death released them from their sufferings, and the physicians of the Abbey noted the devouring pain which burned the affected parts with intolerable agony, cold as they appeared to the touch. One chronicler describes the gangrene as of the black and dry variety, but another physician of the Abbey refers to many cases, in which the gangrene was not altogether dry, but suppurated, and was accompanied by a terrible smell. Four hundred parishes were thus attacked in this part of France.

In 1710, M. Noel, a surgeon of the Hôtel Dieu at Orleans, published an article in *L'Histoire de l'Academie Royale de Science*, in which he states that "within a year's time he had received into the hospital more than fifty patients afflicted *d'une gangrène sèche noire et livide*." He adds that this disease affected men only, and that in general the women, except some very young girls, were quite free from it. The members of the Academy were of the opinion that the disease was produced by bad nourishment, particularly by the use of bread in which there was a great quantity of ergot.

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M. Fagon, the chief physician to the king of France at this time, describes ergot as "a king of monsters in vegetation, which a particular sort of rye, sown in March, is more apt to produce what is sown in the autumn, and which often abounds in moist, cold countries, and in wet seasons."

In 1710, after an outbreak of the disease in Russia, Peter the great instructed Schober, a physician of that period, to make a study of it.

During the eighteenth century, Germany had several visitations of the disease.

In the year 1702, an epidemic of ergotism broke out in Freiburg, and in 1716, it is recorded by Vedelius as being prevalent in Saxony and Lusatia. In 1717, Vater states: "It appeared again in Germany, and five years later there was an outbreak in Silesia."

Shortly afterwards, an epidemic of the malady broke out in Saboth, which is described by Burghart and another in Würtemberg, which is recorded by Schrine, who visited as many as five hundred patients. He vividly describes the symptoms and progress of the disease in the following words:-- "Beginning with a disagreeable titillation of the feet, as if ants had been creeping up on them. This was soon followed by a violent pain in the stomach, by which both the hands and the head were affected. The titillating sensation was followed by a violent contraction not only of the hands and feet, but also of the toes. The patients exclaimed that their hands and feet were on fire, while their bodies were bedewed with copious sweats. After much pain, the head became heavy, and vertigo came on, with dimness of sight. Some either became totally blind or saw objects double. They staggered and lost their memory. Soon became insane, others melancholic and comatose. In those above the age of fifteen epilepsy was liable to come on, and generally proved fatal."

In addition to these sufferings, the patients were afflicted with a voracious appetite, almost impossible to satisfy. The pulse in every instance was normal and healthy. The disease lasted from

two to eight, or even twelve, weeks with intermissions.

One of the most remarkable things connected with this malady was the varied and decided forms it took. Tissot gives an account of the spontaneous gangrene form, the first symptom of which was a numbness of the legs, followed by a pain, with slight swelling, but no inflammation. Then, in rapid succession, came coldness, lividness, mortification, and the dropping off of the legs. Among the patients afflicted in the Sologne, there was no fever, and the pains were slight. No remedies were applied, and the nose, fingers, hands, arms feet and legs, when they became gangrenous simply dropped off.

The outbreaks in Germany, Sweden and Russia were to some extent of a different type from the epidemics of gangrene common in France. The sensory symptoms were followed by a disorder of the motor system and spasms of the limbs, very often passing into contractions of the joints, which no force could unbend, and sometimes accompanied by convulsive fits of the whole body, in which the disease was often mistaken for epilepsy. This was the type called convulsive ergotism, or, in Germany, *Kriebelkrankheit*.

From 1746 to 1747, there were several outbreaks of ergotism in Sweden, Russia, the Sologne, the Landes, Artois, Flanders and other places. In this epidemic, the pain seems to have been terribly violent, so that the victims in their agony hurled themselves into the water.

About the middle of the eighteenth century, there was a slight outbreak of ergotism in England. On the 10th of January, 1762, a family living in Wattisham, in Suffolk, consisting of the father, mother and six children, were attacked almost simultaneously with the symptoms of gangrenous ergotism, several of them eventually losing a portion of their limbs. The disease began with intense pain in the legs, and contractions of the hands and feet. It was proved that they had not been using rye flour, but that their bread for a short

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time before had been exclusively made from damaged wheat, grown in the neighborhood, and kept apart from the farmer's good corn, so as not to spoil his samples. It had been sent to the mill just before Christmas, and had been used by some others besides the family, who developed the symptoms of ergotism.

There is little doubt that the chief reason of our immunity, in England from epidemic ergotism had been owing to the fact that the grain was better grown in this country, and that rye was a comparatively rare crop, and seldom used for food, wheaten bread being generally preferred.

It was not until the end of the eighteenth century that the scientific world really awoke to the fact that there was a direct connection between the various forms of the disease which had attacked the peasantry in many countries and the vitiated rye crops; although the country people themselves and several observant medical men living in the affected districts had been alive to the fact for a considerable period.

According to Haser, it was not until the year 1771 that the identity of the old *ignis sacer* with the gangrenous ergotism was made clear.

About 1783, Saillant, at the instance of the Royal Society of Medicine in France, undertook an investigation to determine whether ergot of rye was capable of producing a dry gangrene or no, a question which many observers of the period, such as Langius, Perrault, Dodart and others differed. He studied very closely on the spot symptoms of the two distinct forms of ergotism, and has left a valuable clinical description of the disease, and the methods of treatment used at the time.

"The dry gangrene," he states, "is characterized by the mortification of some of the extremities, sometimes all of them. Often it is preceded by a redness, which, however, is not inflammatory, and by some vesifications. The limb swells, becomes painful, and has a sensation sometimes of cold, but more frequently of insupportable heat. The vessels obliterated, the phlegm becomes black and hard,

and the patient at the point of death is happy if, he can survive with the loss of his extremities.

"The first symptoms of the disease are not alarming. The pulse continues for some time nearly in the natural state, and is gradually weakened in proportion to the violence of the disease. The blood appears black and thick, and the urine in a rational condition. The belly is hard and tense, but the appetite continues, and digestion goes on as in health. IT is only towards the end, and even on the approach of death, that diarrhea usually comes on.

After death, on examination of the body, the intestines and other viscera are often found strewed over with gangrenous spots.

"The cure of this disease is sometimes accomplished by profuse sweats and by a good diet. The medical treatment consists in evacuating the *primæ viæ*, in giving internally laxative apozems, diuretics and antiseptics, while recourse is had externally to those topical applications which are proper for resisting gangrene, for favouring the separation of the disease part without amputation, and for aiding suppuration."

After this description of dry gangrene, he proceeds to give an account of the convulsive epidemic affection:--

"In that disease," he observes, "there is not any gangrene—the violent convulsions are its essential characteristic. It has no regular course, but returns by paroxysms, and while it is in reality less dangerous than the dry variety, it yet makes its attack with much more alarming appearance. The patient at one time feels as if he were burnt with devouring fire, and soon after is sensible to cold similar to what arises from the application of water. These symptoms are accompanied by loss of appetite, nausea and vomiting, which are soon exceeded by inexpressible pain. The patient, without shedding tears, utters lamentable cries; and the afflicted members are either contracted with extreme violence or remain stretched out with inflexible rigidity. The pains soon abate, when the patient is able to stretch the contracted membranes or to bend those that have been stretched, but they

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return in a fresh accession with the same severity. The patient is no sooner out of the fit then he is tormented with a voracious appetite, and he digests with sufficient ease all sorts of ailment. In particular years, there succeeds swelling of the feet and hands, and the fingers have been covered with vesicles full of serosity, the discharge of which, however, does not procure any relief. The disease, after several accessions, terminates itself by sweat or diarrhea, which is more violent when patients eat little than when they eat a great deal. But for the most part there remains for the space of some weeks several inconveniences, such as vertigo, *tinnitus aurium*, deafness, loss or diminution of sight or the like. If the affection continues long and degenerates into epilepsy, and if during the affection there shall occur a mental disorder, it in general continues for life. If there occurs an obstruction of the liver there in general supervenes a spitting of blood, sometimes followed by phthisis, by epilepsy, palsy, or, in fine, apoplexy.



**Church of Saint Geneviéve Des Ardents.
Destroyed in 1747.**

"This disease attacks most frequently those who are plethoric, and in that case the convulsions are the most violent. But those of the phlegmatic temperament are most subject to comatose affections after it.

"Some have observed blood tissue from the nose and mouth, but they have not observed any

alteration in the viscera, excepting that the lungs were much inflated and distended with blood. In other cases the liver and gall bladder have been much distended with the bile, and an erysipelatous inflammation has been observed over the whole surface of the abdominal and even the thoracic viscera.

"Antispasmodics joined to the diaphoretics appear to be the only remedies useful against this disease. Narcotics have seemed only to aggravate the affection, but bleeding and purgatives have been employed with some advantage in the beginning of the disease, according to the circumstances and temperament of the patient."

The result of the modern study of the outbreaks of ergotism, including the minute record of individual

cases, shows that there is no hard and fast line between the gangrenous and the convulsive forms; on the whole, marked by the phenomena of gangrene, have not been wanting in functional nervous systems, and that the German or northern outbreaks have often been of a mixed type.

Ergotism has by no means ceased in Europe. It is, however, now almost confined to the Russian Empire, in many parts of which it seems to be endemic. From 1785 to 1786, Kieff was ravaged by an epidemic, and between that period and 1838, there were eight distinct outbreaks of the disease in Russia. The year 1845 was

very fertile in ergotism, and in 1881 there was a severe outbreak in Ekaterinoslav. In 1883, there was a further outbreak in Tomsk, in which thirty-six out of three hundred patients died, and as recently as 1888 there were may cases of the gangrenous type in the Government of Poltava, in which many of the sufferers lost a foot or a hand. Ergotism has also been observed in Abyssinia.

The comparative disappearance of this terrible scourge may be attributed to scientific investigation, to improvement in the social conditions of the people, and to the cultivation of rye and other

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cereals on drier soil under more favorable climatic conditions.

Many were conjectures which were made by the early observers as to the cause of ergotism. Linnæus erroneously alleged that the malady was due to radish (*Raphanus*), and thus his authority led to the name *Raphania*, being given to ergotism. It does not appear, however, that Linnæus had ever visited the ravaged districts, and it has since been shown that the *Raphanus* is never poisonous.

Modern science has shown us that ergotism is due to one or more poisonous principles, which are elaborated by the fungus *Claviceps purpurea*, and that contributory causes are starvation, misery and ill-health. Epidemics thrive only under conditions which are favourable to the growth of the parasite; that is, after a damp season, and particularly when a hot and dry summer has followed a very rainy spring, especially when the grain has been grown in marshy districts, and in the shade.

It has been conjectured that the two varieties of ergotism, the gangrenous and the convulsant, are caused by the varying amount of the active constituents present in ergot, and that the variability and strength of the preparations of ergot are due to the inconsistent nature of the active principles in the crude drug.

THE THERAPEUTIC HISTORY OF ERGOT

It is very probable that the physiological effects of ergot on the uterus were known to the "wise woman" who performed the functions of the midwives from a period of great antiquity, and a secret of such value (from more than one point of view) would no doubt be jealously guarded, and be handed down only by word of mouth.

It had been stated that its use was known to "wise women" of the Highlands of Scotland at a very early period. They usually ordered it to be swallowed whole, in its natural state, giving from five to nine grains for a dose, but laying special

stress on the point that the dose must first always be in odd numbers.

The earliest known allusion to the action of the ergot on the uterus was made by Lonicer, in 1582, and again by Camerarius, in 1688, who records that women in certain parts of Germany were in the habit of employing spurred grain to accelerate parturition. Ray, in 1693, also refers to ergot as being considered an excellent remedy for "*Lochiorum fluxus*." No further reference seems to have been made to its medicinal properties until the year 1747, when Rathlauw, A Dutch surgeon, is believed to have used it in midwifery cases. That he undoubtedly used some medicinal agent of great obstetric value is evidenced by his own report of his methods: "I avail myself of a medicament," he states, "the second dose of which has never failed, in my experience, to excite true pains, or to change false ones to true, so that the efforts of the mother acting better on the child, the mouth of the womb dilates more. On different occasions, when only good pains were lacking, I have conducted to a happy end, by this means and without the help of any instrument, some most difficult labours."

Levret and others conclude that the drug so successfully used by Rathlauw was ergot of rye, and the former severely censures him for having kept secret the particulars of a method of treatment so useful to humanity.

About 1747, Salerne experimented with ergot on pigs, ducks and fowls, and, finding that they died of gangrene, he corroborated the statement of a previous observer, that fresh ergot was most virulent, and that after some months it gradually lost its poisonous properties.

From that period there is no further mention of it being so used, until Parmentier, who had been investigating the subject, in an interesting letter in the *Observations sur la Physique*, gives the following account of its employment.

Letter of M. Parmentier, Apothecaire Major de l'Hotel Royal des Invalides, to the Abbé Rosier,

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1774:--

"In the number of letters, Sir, that I have had the honour of receiving on the subject of ergot, I have found nothing contrary to the opinion of M. Model on the origin and effects of this peculiar excrescence of rye. I am even bold enough to assert that they all confirm, as do my own experiences, that the accusations made on this subject have absolutely no foundation. However, as it is only after a long train of evidence that the opinion of the celebrated chemist of St. Petersburg will triumph, I think that I ought in the meantime to communicate to you certain observations, the singularity of which appeared to me to be worthy of the attention of doctors and physicians. Here is what madame Dupille,--whose chief occupation seems to be the alleviation of suffering,--here is, I say, what she had the goodness to write to me concerning ergot:--

'I read, Sir, in the last *Mercure*, of June 1774, an extract from your works with respect to ergoted rye. A few weeks ago I heard mention the danger of this grain, and the terrible diseases it was said to have caused in Alsace, if I remember rightly, or in the neighborhood. This information surprised me greatly, for from childhood I had known it possessed a certain property from which I had never seen ill effects, nor had my mother, who had taken it to women who were in labour. I do not know form whom she learned this recipe. She had no other knowledge of medicine (nor have I) then the desire to help the needy. This is how she use to administer it on several occasions to various women, among others to the wife of the farmer of Birtichere, near Chaumont-Vexin, where I stay sometimes; she found that it did her much good.

'I pound this grain, which is commonly called *faux seigle*, to as fine a powder as possible. I then take a thimbleful of it, and make the patient swallow it in a spoonful of water or wine or broth, whichever is nearest to hand.

'The woman who has swallowed it ought to be delivered in a quarter of an hour. I only administer it, according to my mother's directions, when labour is too slow. The women who have taken it have never been ill afterwards.

'This, Sir, is all that I know, from my own experience and my mother's about ergoted rye. If it can be of any use in your work I shall be delighted. Your essay has greatly reassured me with regards to the effects of this grain, which I feared to administer after all I had heard, and gives me the satisfaction of being able in a quarter of an hour to relieve from her pain a woman who is worn out by long and difficult labour; for my mother has assured me, and I myself have seem them delivered in a quarter of an hour.

'I think I ought to add, Sir, that in several herborising expeditions which I have made to the outskirts of Paris, I have had on occasion to remark this year that ergot was much more common in the pieces of rye; that these were richer, and the ears not so full; that is always on the edges of the pieces that it is found more abundantly; and that, finally, even before the complete maturing of the rye, this ergot at harvest time is loose in the husk that the slightest movement of the sickle is sufficient to detach it, so that it is rarely that even a few grains of it reach the barn."

In 1777, Desgranges, a surgeon of Lyons, having met with several midwives at that period, both in Lyons and the surrounding district, who, from a traditional knowledge were accustomed to employ, with no little mystery, the spurred rye in cases of lingering labour, at length made a great many trials of it, which for the most part were successful. He published several accounts of his observations and results in various journals, in which he specified, with great care, the particular circumstances in which ergot might be employed, and those cases also where it was contra-indicated. In spite of prejudices and opposition, he continued strongly to advocate its use, and to his perseverance we no doubt owe, to a very large extent, the use of ergot as a medicinal agent today.

When first announced in France, the use of spurred rye was known only in the department of the Rhone and some other departments on the frontier. But soon after the publication of its properties by Desgranges, it came to be used throughout the country.

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Dittmar states that ergot was employed in different parts of Germany, and particularly in the environments of Ludwigsburg, in Würtemberg, where it was known and used by the midwives. It was soon tried in Italy by Bigeschi, of Florence, and Pistre, of Ferrara, who published directions to midwives for using it, and in France was advocated by Bourdot and Goupil of Paris, also Chevreuil of Angers. In Germany, its use was supported by Orjollet and Huchede, and in England, by Clarke, Davies and Merriman.

In America, it appears somewhat doubtful whether its first introduction was due to Hosack or to Stearns. There is reliable evidence that Hosack was the first physician in America to employ ergot to arrest uterine haemorrhage. On the other hand, it appears that Stearns was the first to use it in that country for accelerating delayed parturition. His suggestion is embodied in the following letter to a Mr. S Akerly, written by Stearns from Saratoga country, on January 25, 1807:--

"In compliance with your request, I herewith transmit you a sample of *Pulvis parturiens* which I have been in the habit of using for several years with the most complete success. It expedites lingering parturitions and saves to the accoucheur a considerable portion of time without producing any bad effects on the patient. The cases in which I had generally found this powder useful are when the pains are lingering and have wholly subsided, or in any way incompetent to exclude the foetus. Previous to its exhibition it is of the utmost importance to ascertain the presentation, and whether any preternatural obstruction prevents the delivery, as the violent and almost incessant action which it induces in the uterus precludes a possibility of turning. The pains induced by it are peculiarly forcing, though not accompanied by that distress and agony of which the patients frequently complain when the action is much less.

"My method of administering it is either in decoction or powder. Both half a drachm of the powder in half a pint of water and give one-third every twenty minutes till the pain has commenced. In powder I give from five

to ten grains. Some patients require larger doses, though I have generally found these sufficient; if the dose is large it produces nausea and vomiting.

"In most cases you will be surprised with the suddenness of its operation; it is therefore, necessary to be completely ready before you give the medicine, as the urgency of the pains will allow you but a short time afterwards. Since I have adopted the use of this powder, I have seldom found a case to detain me more than three hours. Other physicians who have administered it concur with me in the success of the operation.

"The *modus operandi* I feel incompetent to explain. At the same time that it augments the action of the uterus it appears to relax the rigidity of the contracted muscular fibres. May it not produce the beneficial effects of bleeding, without inducing that extreme debility which is always consequent upon copious depletion. This appears to be corroborated by its nauseating effects upon the stomach, and the known sympathy between the viscera and the uterus.

"It is a vegetable, and appears to be a spurious growth of rye. On examining a granary where rye is stored you will be able to procure a sufficient quantity from among the grain. Rye which grows in low wet ground yields in great abundance."

It is said that Stearns' attention was first called to ergot by observing its effects on some cattle that had eaten portions of the infected grain.

It is claimed that when he first used ergot he did not know of its previous employment for the same purpose in Europe, and Bigelow states, in *The New England Journal of Medicine and Surgery*, that it is to the best of our knowledge exclusively an American practice. So it is evident that its use in Europe at the end of the eighteenth century had not at that time spread to America. It is worthy of remark that in Stearns' letter, which has been quoted here, he never mentions ergot by name, and it is therefore quite probable that he was in ignorance of it, and may have at first heard of its administration in childbirth from some midwife of the backwoods in the course of his practice.

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In June 1813, Prescott, of Massachusetts, who followed Stearns as a pioneer in the use of ergot in America, published a dissertation on "The natural history and medicinal effects of the *Secale cornutum* or ergot," in which he treats of its operation exclusively upon the uterus.

He states:-- "I cannot say with Stearns, 'I have never been disappointed in my expectations of its effect.'" He administered ergot in the form of a decoction composed of half a drachm to four ounces of water, of which one-third was given a dose.

A somewhat amusing use of ergot was made by a medical practitioner, is recorded in a letter which appeared in the *Lancet* of 1829. It states that an old woman brought to the doctor a favourite Malay hen, which to her great grief had been ten days in laying an egg. The practitioner thought here was a chance to try the effects of the new ecbolic, and immediately thrust 30 grains down the fowl's throat, after which, he states, "the hen quickly laid, but whether the *post hoc*, or *propter hoc* let others determine."

EARLY METHODS OF ADMINISTERING ERGOT

The earliest method of administering ergot was in its natural state in the form of fine powder. In this manner it was given by Desgranges and Stearns, and was called by the latter *Pulvis Parturiens*, and was also known as *Pulvis accelerans*. By Desgranges it was termed "poudre obstétrical," and by Bordot "Poude ocytique." By some it was recommended to be given in "good generous wine"; by others "mixed with milk or cloves or with the distilled waters of nutmeg or mint." Balardini advises that it should be swallowed with white wine, while Bordot frequently prescribed it in combination with powdered nutmeg and sugar. The dose given varied according to the circumstances of the case, and the susceptibility of the patient. The maximum prescribed by Stearns was 10 grains, but it was frequently given by other practitioners in 90-grain doses, in a wineglass ful[l] of barley water, cinnamon or orange water.

Goupil relied on the following formula:--

Rx Secalis Nigri Pulv., 1 dr.
Syrupi Symplifies, ½ oz.
Ol. Menthae Essent., gutt. iij.
Misce in mortario.

To be given in doses of a spoonful at intervals of ten minutes.

Stearns and Gill suggested the administration chiefly employed in America, was in the form of an infusion, commonly called "Tea of black rye." It was thus used largely by American midwives who prepared it by infusing one drachm of the powdered ergot in a wineglassful of boiling water and allowing it to stand until it became cold. The liquid was then strained and divided into two equal portions. The first was administered when necessary, and the second after the interval of one hour if required. This infusion was recommended by Chevreuil and Akerly, although Walter considered it too weak, and suggested using an infusion double that strength.

Another form of administering ergot was the decoction which was made of the same strength as the infusion, but was boiled for a quarter of an hour, and then allowed to cool. This was known as *Decoctum Parturiens*.

Madame Lachapell gave ergot in the forms of both infusion and decoction, in tablespoonful doses, at short intervals. Desgranges recommending roasting the powdered ergot gently before the fire, and also states that he gave the black external part only in doses of four to six grains, without any of the inner substance, and that these small doses proved equal in effect to one drachm of the entire grain. Villanueva mentions that he found ergot useful as an enema, when it could not be borne by the stomach, and in this way it might be used in much larger quantities. He employed from two to three drachms of the powder, boiled in half a pint of water, and strained off for use. Should the first enema fail, the second or third might be given.

A formula much used in France, devised by Pierquin, was known as "ocytic potion."

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It was made as follows:--

Rx Spurred Rye,	1 drachm.
Simple syrup,	3 ounces.
Tincture of Opium,	20 drops.
Essence of Bergamot,	q.s

The hypodermic injection of extract of ergot was first employed for aneurisms by Professor Langenbeck, of Berlin, in 1869, but, owing to the irritation set up, this form of administration was not met with favour.

THE COLLECTION OF ERGOT

Ergot is chiefly exported from Russia, Austria, Germany and Spain.

Rye is practically the staple cereal of Russia, and from the annual crop, which is very large, a considerable amount of ergot is collected. The sowing time is during July and August, and the grain is harvested in June and July. During threshing time the ergot is separated out and collected, then simply dried in the air. After drying it, the peasant collectors pack the ergot in small parcels which they dispose of to the dealers, by whom it is carried to the towns and resold to vendors to the exporters and druggists. Tomsk, Omsk, Samara, Viatka, Siberia and Bessarabia are the principal Russian trading centers for the drug.

The increase in the quantity pf ergot exported from Russia has been very great in recent years. In 1900, 45 tons of the value of 19,650 roubles were exported from the country, while in 1906, 215·30 tons of the value of 262,233 roubles was the total amount.

All investigators agree that the great value of ergot depends on the freshness of the drug, and if the fungus is collected two or three weeks before the rye is fully ripe its action is much greater.

Keller gives the following statement of the alkaloidal value of ergot grown in different countries of Europe:--

Russian contains 0· per cent. Alkaloid; Austrian, 0·225 per cent.; Spanish, 0·205 per cent.; German, 0·13 to 0·157 per cent.; Swiss, 0·095 per cent.

After examination by Keller's process, Dobme gives the following percentages of cornutine in the samples taken by him: Spanish, 0·29; Russian, 0·18; German, 0·15.

CHEMICAL HISTORY

The somewhat mysterious origin appears to have attracted many investigators, but, owing mainly to lack of knowledge at the period in which they worked, the early observers only succeeded in isolating some of its inert constituents. The physiological active preparations they were able to obtain were simply crude resinous mixtures, which their discoverers regarded as acids or alkaloids according to their methods of preparation.

Pettenkofer, when examining ergot in 1814, obtained some crystals which he thought resembled those of morphine. Vanquelin next made a chemical examination in 1816, and he was followed by Combes, who, in 1826, asserts that he found starch, but could not separate any active principle; and down to about 1830 nothing was known of its chemical composition.

The first reliable investigation into ergot was made in 1831, by Wiggers, who found it contained 35 per cent. of oil and a crystalline wax-like substance, which he termed cerin; he also proved that starch and hydrocyanic acid were absent, and described a resin, soluble in ether and water, which he termed ergotin. From feeding experiments on cocks, he concluded that the toxic properties of ergot were wholly due to the resin.

In 1840, the Pharmaceutical Society of Paris offered a prize for the best essay on ergot of rye, and a research was made by Bonjean, who stated that he found that ergot owed its activity to two principles, one of which he contended was a powerful poison

and the other a "salutary medicine." The former he called "Oil of Ergot" and the latter "ergotin," and

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for his research he was awarded a gold medal. Ergotin soon came into general use as a remedial agent in various diseases such as haemoptysis, dysentery, haemorrhoids, etc., and in 1855 was largely employed during the Crimean War with apparent success in chronic diarrhea following cholera.

In France ergotin became the fashion, and appears to have been regarded about that time as a panacea for the majority of ills. It was exhibited in the form of ergotin dragees, ergotin injections, ergotin lemonade, which was recommended for scurvy, and in many other forms.

The first approach toward the isolation of a pure principle from ergot was made by Tanret, who in 1876 described the crystalline alkaloid "ergotinine," and an amorphous alkaloid which he regarded as a mere physical modification of the crystalline. Independently and almost simultaneously, Kraft also isolated the amorphous alkaloid, and by naming it hydro-ergotinine, suggested its relation to the crystalline ergotinine.

According to Kober's investigations, in 1890, the most active constituent of ergot is cornutine, which, together with sphacelinic acid is contained in an alkaloid extract after the removal of oil by ether. He also stated that no aqueous extract of ergot is of any therapeutic value after being made nine months, but Kober's observations were not only questioned, but totally contradicted by Tanret.

According to Keller's investigation, in 1896, ergot contained but one base, and Kober's cornutine, Tanret's ergotinine, and Dragendorff and Podwyssotski's picrosclerotine were simply different forms of the same body.

In 1897, Jacobj gave a name of sphacelotoxin to a substance of a resinous nature which he obtained from ergot, and which he regarded as a specifically active constituent of the drug.

Although a good deal of clinical evidence was adduced to support Tanret's view that in ergotinine

he had isolated the active therapeutic principle of ergot, the experiments conducted by Kober and others showed the pure crystalline alkaloid to be inert. Recently this apparent discrepancy has been explained by the isolation by Barger and Carr, in the Welcome Physiological Research Laboratory, of the highly alkaloid, ergotoxine, which, although itself amorphous, can, in the form of crystalline salts, be prepared in a state of chemical purity. It has since been shown that ergotoxine is the hydrate of Tanret's crystalline ergotinine, and that either can easily be converted into the other, and also that the active principles prepared both by Kober and Jacobj, owe their activity to the presence in them of ergotoxine.

Both laboratory experiment and the results of clinical trial have already made it evident that ergotoxine in suitable doses produces the effects for which ergot is prescribed.

The great value, however, of this principle as a medicinal agent is due to the fact that the dose can be regulated with a degree of accuracy which has been impossible in the past when only extracts and similar preparations of the crude drug were available.

The results obtained with the official liquid extract, and with other preparations of ergot hitherto in use, have been variable and uncertain. This has been due to ignorance of the properties and active constituents of the drug, which has of necessity prevented the elaboration of correct pharmaceutical methods.

The isolation of the active alkaloid ergotoxine now renders possible, for the first time, the production of definite strength. A chemical method of standardizing such a product has not yet been devised, but the activity, as represented by the ergotoxine content, can be gauged with extreme accuracy by physiological tests.

Various methods of physiologically standardizing ergot have been suggested. The production of gangrene in the cock's comb, described by various observers since the seventeenth century, has been

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used as a test of activity. This test tells little more than that a certain specimen of ergot is or is not active. No accurate standardization of pharmacological or therapeutic value is possible by means of this test.

The rise of blood-pressure following the intravenous injection of a standard dose of ergot is also suggested as an indication of activity. Such a method alone is neither accurate nor complete. It furnishes at most a rough test of the activity of such a preparation as the official liquid extract.

Preparations containing ergotoxine can, however, be accurately assayed, by physiological means, for their ergotoxine content. This is rendered possible by observation of the characteristic action of the alkaloid on the terminal motor elements of the sympathetic nervous system.

The importance of this is evident. The activity of ordinary preparations cannot be gauged. Different specimens have been shown to vary from inertness to an activity which is believed to be the cause of the sporadic cases of ergo-gangrene which have been reported as following medical doses.

With the discovery of ergotoxine, and the consequent improvement in preparations, the confidence of the practitioner in ergot is restored. He is now able to prescribe a standardized product of exact strength, in accurate doses, and obtain definite results.



Fig. Photo: Courtesy of Tjakko Stijve.
<https://synapticstimuli.com/>

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A CHRONOLOGICAL TABLE OF THE CHIEF EVENTS IN THE HISTORY OF ERGOT FROM 2500 B. C. to 1908.

B.C.

- 2500 Probable allusion to ergot on Babylonian tablet.
600 Probable allusion to ergot on Assyrian tablet.
300 ca. Probable allusion to ergot in the Hindu Vasna.
A.D.
- 857 ca. First recorded epidemic of ergotism.
944 Epidemic of ergotism in Aquitaine, Limousin, Angoumois and Perigord.
950 Allusion to the poisonous properties of ergot made by Abu Mausur Mawaffak.
957 Epidemic of ergotism in Paris.
1039 Epidemic of ergotism in Metz.
1089 Epidemic of ergotism in Lorraine.
1096 Sigebert records an epidemic following the consumption of damaged crops.
1129 Epidemic of ergotism in Paris.
1582 Lonitzer (*Lonicerus*) alludes to ergot, describes its appearance in the ears of rye and first notes its uterine properties.
1588 Thuillier describes ergot and mentions its haemostatic properties.
1596 First suggestion that ergot was probably the cause of the epidemics of *ignis sacer*.
1630 Thuillier calls attention to the fact that ergot was the cause of the epidemics.
1648-75 Ergotism prevalent in Voigtland.
1660-74 Ergotism prevalent in Aquitaine, Gattinais, and the Sologne.
1682 Bernier notes the fact that ergot was the cause of dangerous diseases in the Sologne.
1688 Camerarius records the medicinal use of ergot by women.
1693 Ray describes the growth of ergot and alludes to its medicinal properties.
1702 Epidemic of ergot in Freiburg.
1709 Epidemic of ergot in Berne, Lucerne and Zurich.
1710 Epidemic of ergot in Russia.

- 1716 Epidemic prevalent in Saxony and Lusatia.
1717 Epidemic of ergot in Germany and Silesia.
1746-7 Severe outbreaks of ergotism in Sweden, Russia, Sologne, Les Landes, Artois and Flanders.
1747 Rathlaus stated to have used ergot in midwifery practice.
1762 A case of ergotism in England.
1771 The identity of *ignis sacer* with gangrenous ergotism established.
1774 Parmentier investigates ergot.
1785 Epidemic of ergot in Kief.
1807-08 Stearns publishes his experience of the use of ergot in America.
1814 Pettenkofer makes a chemical examination of ergot.
1816 Vanguelin makes a chemical examination of ergot.
1831 Wiggers describes a resin which he terms "ergotin."
1840 Bonjean investigates ergot and extracts oil of ergot and ergotin.
1845 Outbreak of ergotism in Russia.
1875 Tanret describes ergotinine, and Kraft isolates hydro-ergotinine.
1890 Kobert investigates ergot and isolates cornutine and sphacelinic acid.
1896 Keller investigates ergot.
1897 Jacobj isolates sphacelotoxin.
1907-08 Barger and Carr discover ergotoxine.
1908 AMA Annual Convention.
1917 Arthur Stoll investigates ergot.
1918 Stoll isolates ergotamine.
1926-27 Last Ergot epidemic in Russia.
1929 Albert Hofmann Joins Sandoz.
1938 Hofmann produces LSD-25 (Lysergsäure-diäthylamid).
1943 Friday April 16, Albert Hofmann experiences the effects from LSD-25 in the form of a tartrate, that seeped into his fingers during an experiment.
1943 Albert Hofmann on 19 April begins the first of a series of self-experiments with LSD-25.

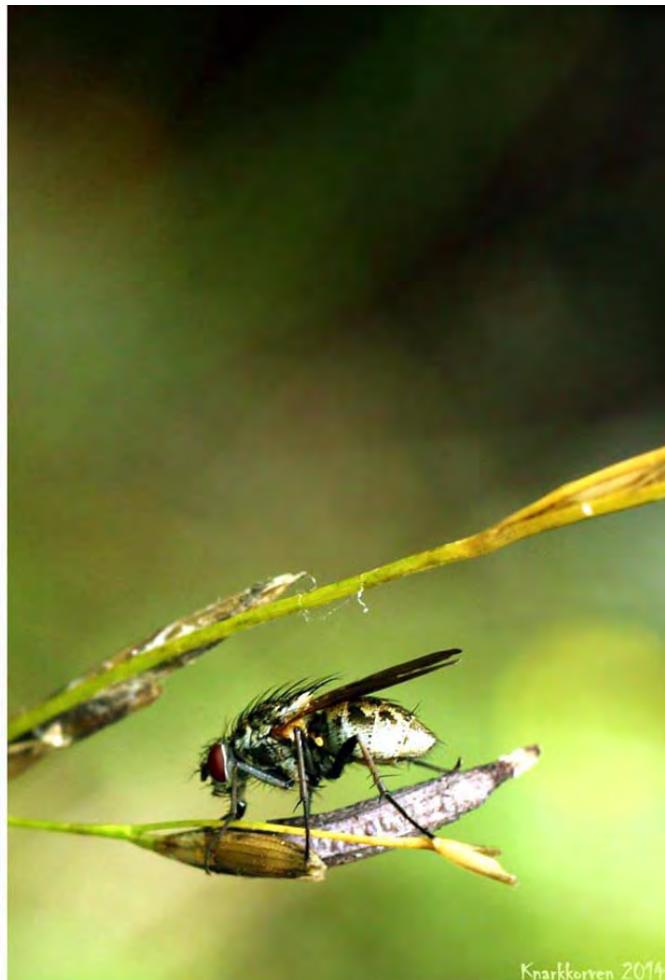
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ERGOT GALLERY:

The Following Photos of Ergot are from Västergötland-Sweden,
Courtesy of Knarkkorven (Michael Engström).



KK



Knarkkorven 2014

Ergot on wild grasses. Västergötland-Sweden. A fly is enjoying a meal of the cock-spur's meat.



Ergot from wild grasses. Västergötland Region,-Sweden.

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**Knarkkorven managed to grow some stroma from his harvest of *Claviceps purpurea* from wild grasses.
In his own words and in pictures.**

"I collected a few (image 1) and placed them in a jar with a few drops of water outside during the winter (image 2). A few months ago I transferred the sclerotia to a plastic jar with holes in bottom and lid, put in a bottom layer of vermiculite (image 2) and a thin piece of paper to keep it moist and then I just let nature do its work, watering it with rain and letting the temperature cycles bring out the tiny stroma (images 4-7 with fruit bodies present).

I got an impulse today to open the lid and check on it and one had stroma! A bit dried out, but I can see mycelium on a few other sclerotia (images 1-8)."}



Image 1: A handful of the Ergot.



KNARKKORVEN 2011

Image 2. Sclerotia in plastic jar with holes in bottom with bottom layer of vermiculite.



KNARKKORVEN 2011

Image 3. Sclerotia, layered with a thin piece of paper to keep it moist

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Images 4-6. Naturally watered with rain, the temperature cycles bring out tiny stroma fruiting bodies.

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KNARKKORVEN 2011

Image 7. A bit dried out, only one sclerotia had stroma (fruiting bodies).



KNARKKORVEN 2011

Image 8. This one, also dried out had some mycelium, as did a few other sclerotia's.

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NOTES

***Claviceps purpurea* (Fr.) Tul. =Ergot.**

Claviceps purpurea is a parasite that occurs on wild grasses and various grain, including cereals, rye, barley, and wheat. It also grows on oats and corn but those are rare. This extremely poisonous fungus has caused extensive mass poisoning with fatal results in earlier centuries due to lack of purification of the crops grown. Although the sclerotia are now increasingly found again in organic farming, but by the modern Reinigungs.- and Ausmahlverfahren a contamination of cereal flour is practically impossible. Ergot mycotoxins have been thoroughly researched; and used today in homeopathic treatments for a wide variety of ailments; including obstetric medicine. Amides of lysergic acid, ergamides, are widely used as pharmaceuticals and as psychedelic drugs such as LSD-25 (lysergic acid diethylamide). Harry Regin wrote on the growth and spreading mechanism of *Claviceps purpurea*.

“In the spring, the spores reach the scars of the host plants due to the wind. The hyphae grow through the scars in the ovary, forming there a dense mycelium that forms numerous conidia and a kind of honeydew. The attracted by the sweet liquid kit insects delay the conidia to healthy plants. These then form on them the hard, horn-like sclerotia, which we then call mother grains. Often they fall out of the ears, and form after long winter in the spring small Fruchtkörperchen. The cycle begins again.”

From the site of Harry Regin at: <https://www.pilzfotopage.de/tabelle.htm/>



Claviceps purpurea, Ergot of Rye. Fruiting bodies. Courtesy of Harry Regin. Germany.

NOTES¹

Ergot of Rye

Ergot of Rye is a plant disease that is caused by the fungus *Claviceps purpurea*. The so-called **ergot** that replaces the grain of the rye is a dark, purplish **sclerotium** (Figs. 1-2), from which the sexual stage (Fig. 3-4), of the lifecycle will form after over wintering. The sexual stage consists of stroma in which the asci and ascospores are produced. Although the ergot is far different in appearance than the true grain, its occurrence was so common that it was thought to be part of the rye plant, until the 1850's, when the true nature of the ergot was understood. Although the common name indicates that this fungus is a disease of rye, it also can infect several other grains, with rye being the most common host for this species. It is the ergot stage of the fungus that contains a storehouse of various compounds that have been useful as pharmaceutical drugs as well as mycotoxins that can be fatal when consumed. The proportion of the compounds produced will vary within the species. Thus, the victim that has lived through ergot poisoning once may experience different symptoms if that person was unfortunate enough to consume ergot for a second time. This species was also the original source from which LSD was first isolated. It is believed that the symptoms attributed to ergotism have been recorded since the middle ages and possibly even as far back as ancient Greece.



Figure 1: Ergot (sclerotia) on rye. Ergot replaces grain of rye. Until 1850's the ergot was thought to be part of the plant.

Figure 2: Ergot (sclerotia). The ergot is the over wintering stage and is also the part of the life cycle containing the alkaloids.

There are approximately 50 species of *Claviceps*, with most occurring on grasses. All species form the sclerotium that is described above, and will form the same types of compounds.

¹This and the following pages are courtesy of George Wong, Ph.D., Oahu, Hawaii.

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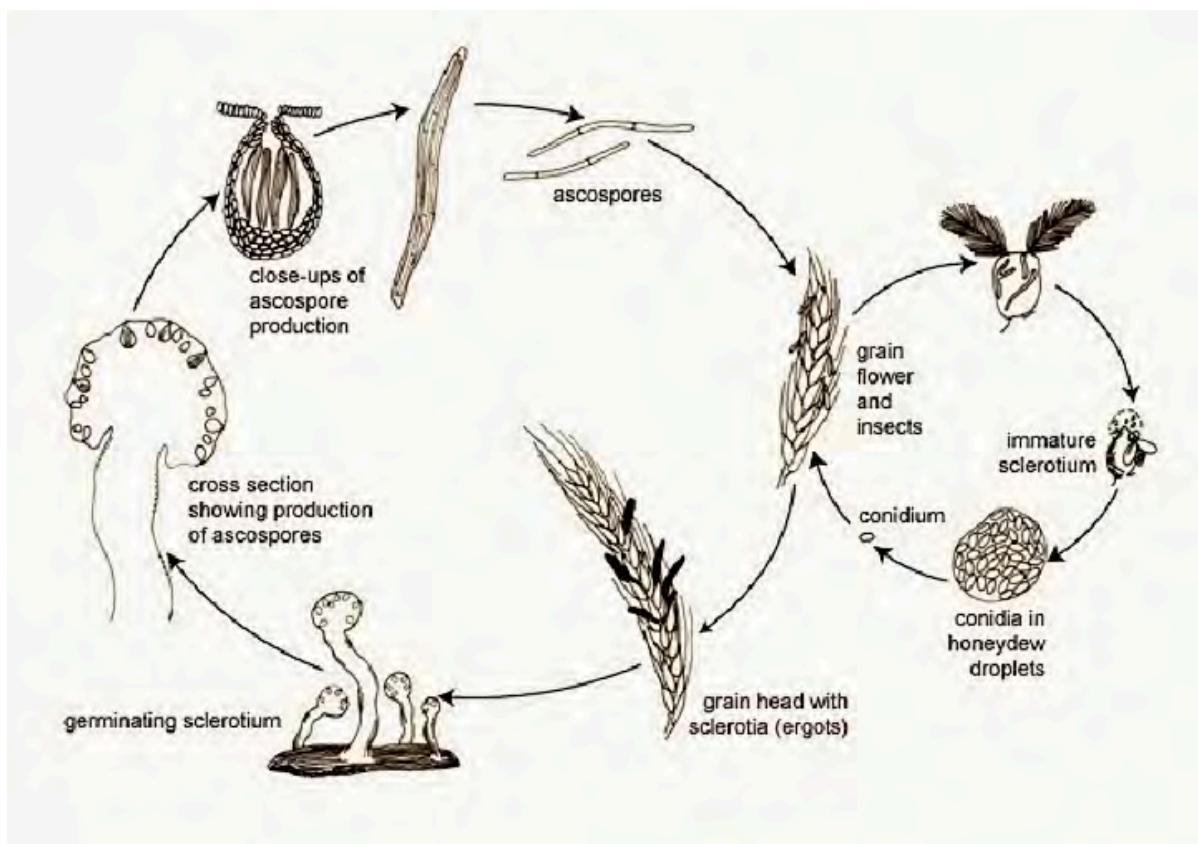
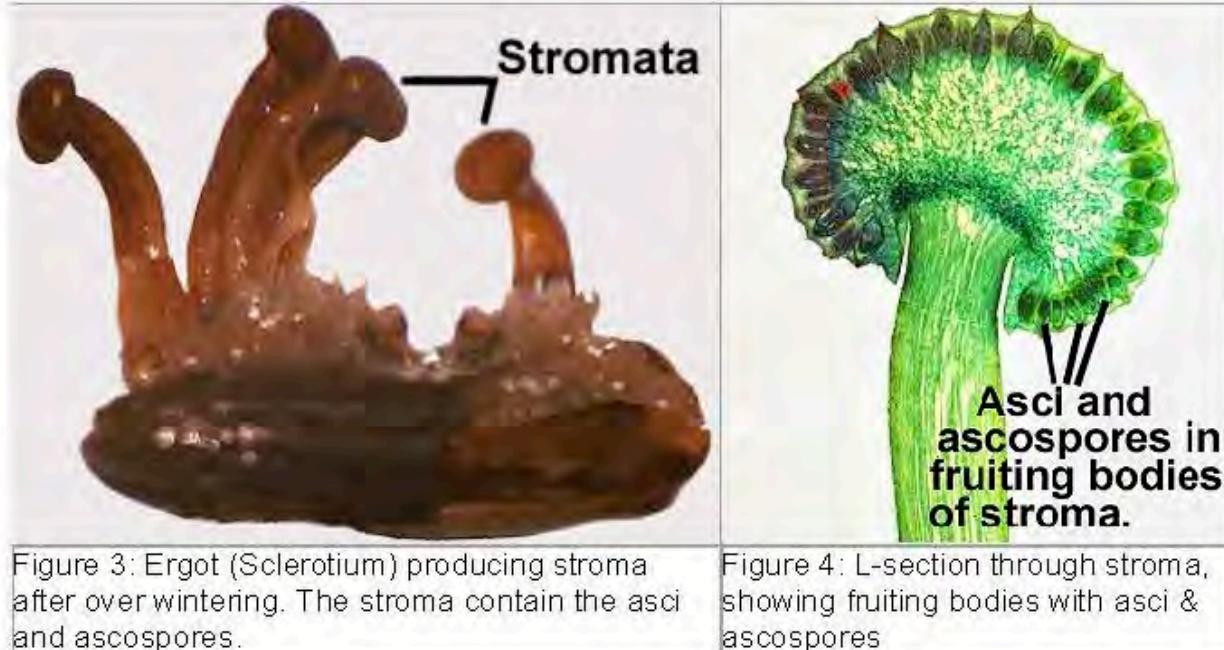


Figure 5.. Summary of *Claviceps purpurea* life cycle. From:
<https://cbertel.files.wordpress.com/2011/02/france-ergot-disease-cycle.jpg?w=480&h=338/>.

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Originally presented as a lecture at the University of Hawaii. Used with Permission.

Ergotism and Witchcraft [Somewhat Abridged with added references].

In victims where convulsive ergotism has occurred during the Dark Ages it has recently been postulated that such victims of ergotism were often thought to be witches. In talking about witches and witchcraft, just how would one go about deciding that someone is a witch? One thing to keep in mind is that the first witch incidents happened centuries ago in Europe, but also occurred in Salem, Massachusetts in the 17th century yet one might assume the kind of criteria in identifying witches was kind of silly when you read about them in the academic literature. For example, if one saw someone with the symptoms of ergotism, and did not know about ergotism, then one might guess that an afflicted individual that was having muscle spasms, or tremors and writhing, would assumed that the afflicted person had some type of physical problem, such as epilepsy, or maybe he might even be on drugs, especially if they seemed to be hallucinating. Most people wouldn't think that witchcraft was involved. However, two-centuries ago, causes of such diseases were not known. Even today, there are people that not only believe in witchcraft, but even practice witchcraft. Richard Graves in his "*The White Goddess*" told of a coven of modern day witches in Portugal who were said to use entheogenic fungi in their ritual ceremonies (Graves, 1961). It seems that people have always been willing to believe in fanciful explanations for a given phenomenon rather than a simple one. So when there were large numbers of people that came down with the symptoms of ergotism, it was concluded that they must have been the victims of witchcraft. It was especially true for convulsive ergotism since some people would claim to hear the devil speaking to them and were thought to be possessed.

Mary Kilbourne Matossian (1989) linked the occurrence of ergotism with periods where there were high incidents of people persecuted for being witches. Emphasis was placed on the Salem Witch Trial, in Massachusetts, in 1692, where there was a sudden rise in the number of people who were accused of being witches, but earlier examples were taken from Europe, as well.

How did Matossian (1989) arrive at the conclusion that the bewitched individuals were victims of ergotism rather than something else? There are many symptoms that are attributed to ergotism and while together they may be rather unique, there are other diseases, or physical afflictions that may also have some of these symptoms. and of the visions that they had seen. This led to accusing more people of witchcraft. As the end of the year neared, 20 people accused of being witches were executed. Who would be the most likely people, in a community, to be blamed?

It appeared that the people that were accused of witchcraft were likely the ones that were trying to help the unfortunate victims. They were usually the doctors, or herbalists, a person who uses plants for medicinal purposes. So these were not the professions to be in during times of witch hysteria. These particular people were selected as the "witches" because, as healers, they had what seemed to be magical powers over the human body when they cured their patients of what ailed them. And the healers were in some cases able to heal symptoms that were associated with ergotism. For example, mistletoe was effective against some kinds of convulsions and spasms. However, during

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these bouts of ergotism, their accusers reasoned that if someone could cure illness, they also had the power to cause it as well. That is why such healers weren't accused of causing bubonic plague and other diseases for which they did not have a cure. Doctors today actually don't have it that different. If you become sick or just say you became sick while a doctor is treating you, you can probably blame the doctor. This situation in which the healer is accused of being a witch is very much analogous to the doctor being sued for malpractice.

However, there are also some records where there did not seem to be any correlation between witchcraft and ergotism. What explanation can be offered for these cases. One explanation of which we cannot be certain is that the symptoms described on records were real. It seems very likely that at least some of the accused people were framed for practicing witchcraft as a means of getting even with somebody. However, these types of events can sometimes be separated. For example, young children and adolescents were frequently the victims and it seemed unlikely that they trying to "get even" with a neighbor. Another explanation was that during bad times when many people became sick and ill, witchcraft persecution would also be prevalent. Witchcraft in this case was used since something or somebody had to be blamed for what occurred.

[A timeline of the effects that occurred in Salem, Massachusetts that outlines the events for the year, as they relate to the Salem, witch trials can be found in the following link.](#)

Claviceps purpurea, or Ergot of Rye has possibly had more impact on the world, past and present than any other species of fungus. We have only touched on some of the events that this fungus has had.

A 20th. Century Outbreaks

While the AMA Ergot to Ernutin' ended their chronological timeline in 1908, it seems that ergot was not much discussed in the recorded literature yet, ever in the 20th. Century, there have been occasions where outbreaks of ergotism came about due to the consumption of contaminated Rye. Horrific outbreaks of Ergotism occurred in 1926-27 in Russia, with more than 10,000 reported cases (Carefoot and Sprott, 1967; Christensen, 1975), and in England in 1927, with 200 cases, mostly among central European Jewish immigrants (Christensen, 1975), and the last known example occurred on August 12, 1951 (Carefoot and Sprott, 1967; Christensen, 1975; Huddler, 1998). [This is for historical reference and was later disproven that ergot was the cause of the outbreak. In a pers. comm. to me by Albert Hofmann, he informed me that the cause of the poisonings in Pont-St. Esprit in Provence, France was actually a mercury poisoning]. Hofmann also wrote of that case in his biography, *LSD, My Problem Child* (Hofmann, 1972). On that day, Jean Vieu, a medical doctor in the little town of Pont-St. Esprit was the first to discover the outbreak while puzzling over two cases of patients who complained of intense pain in the lower abdomen. At first Dr. Vieu believed these cases to be acute appendicitis, but the symptoms that

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his patience exhibited were not those of this particular ailment. Instead, some of these symptoms included low body temperatures and cold fingertips. Even stranger were the wild babbling and hallucinations. By August 13th., Dr. Vieu had a third patient with these symptoms. His concern of these patients led him to meet with two other colleagues and together, the three doctors had twenty patients with the symptoms just described.

By August 14th., the town's hospital was now filled with more patients with the same symptoms and 70 homes were required as emergency wards. When possible, victims were tied to their beds, those that escaped were running mad and frantic through the streets. All available strait jackets were rushed to the town to restrain the victims of this sickness. If there were any town's people of Pont-St.-Esprit that were not terrified by this time, they became so when they learned of a demented, eleven year old boy, who had tried to strangle his own mother. Paranoia soon spread throughout the town, rumors soon spread that this wave of dementia was due to a mass poisoning that had been carried out by the local authorities.

Meanwhile, the doctors, were working diligently to discover the cause of this dementia. That this was caused by some sort of food poisoning, they were certain. However, what had all these people consumed? The doctors searched the houses of the afflicted and found only one common food item. All the victims had consumed wheat bread from the same baker. Samples of the bread were taken and sent to Marseilles. When the results from the analysis of the bread samples were completed, tests indicated that it contained approximately twenty alkaloid poisons, and that they had all apparently came from the same source. The origin of the alkaloids was identified as those belonging to the fungus causing ergot of the rye plant.

It would be four more weeks before the whole story concerning the contamination of the bread would unfold. Beyond the Auvergne Mountains, where wheat is grown, an unethical farmer had apparently sold contaminated rye grain to a miller who had mixed it with wheat and ground it into flour. The miller then shipped the flour to Pont-St.-Esprit, to the baker who was also collaborating with the farmer and miller. It was their greed that was responsible for over two hundred cases of alkaloid poisoning, thirty two cases of insanity and four deaths.

Because of quality control of diseased crops, outbreaks of ergotism was virtually unknown by this time, and because the bread was wheat rather than rye, it took longer to diagnose the food poisoning to be ergot. However, once determined, the contaminated bread and flour were avoided and the problem soon went away, but imagine now if the source of the these symptoms were unknown as was the case before the Middle Ages.

With such a vivid description of convulsive ergotism that was occurring in Pont St. Esprit, Caporael (1976) could have made a comparison of the behavior of those afflicted in Salem, in 1692, with those in this more recent case of ergotism. However, Caporael apparently was not aware of this event.

Current Uses of Ergot

There are medicinal products that have been extracted from Ergot. Some of the more common example include **ergotamine**, which is prescribed for various causes of headaches, including migraines. **Ergonovine** is used to control postpartum hemorrhage and cause contraction of the uterus. The knowledge that the ergot could be used for the latter was known since the 17th. Century when mid-wives prepared extracts of ergots for this purpose. In 1935, Albert Hofmann was able to synthesize ergonovine in the lab, at Sandoz Laboratories. The most well-known is LSD25, which was originally prescribed for psychiatric disorders, but was eventually made illegal due to abuse. Today, many entheogenic plants are now being made available in controlled studies on America.

Ergot Poisoning*

Shortly after the incident, in September 1951, scientists writing in the *British Medical Journal* declared that “the outbreak of poisoning” was produced by ergot mold (Gabbai; Lisbonne; Pourquier, 1951). The victims appeared to have one common connection. They had eaten bread from the bakery of Roch Briand who was subsequently blamed for using flour made from rye. According to reports at the time, the flour had been contaminated by a fungus similar to the hallucinogenic drug **Lysergic acid diethylamide (LSD)**.

Other Theories

Later investigations suggested **mercury poisoning** due to the use of Panogen or other **fungicides** used to treat grains and seeds (Ott, 1993; Hofmann, 1980).

In 1982, a French researcher suggested *Aspergillus fumigatus*, a **toxic fungus** produced in **grain silos**, as a potential culprit (Moreau, 1982).

In 2008, historian **Steven Kaplan** published a book on the incident (in French), entitled *Le Pain Maudit* (Kaplan, 2008). Kaplan asserts that the incident was connected neither to LSD research nor to ergot poisoning (Thomson, 2010). Kaplan's book argues that the poisoning might have been caused by **nitrogen trichloride** used to artificially (and illegally) bleach flour (Kaplan, 2008, Chatriat, 2008).

Fringe theories

Paranormal researcher **John Grant Fuller Jr.**'s 1968 book, *The Day of Saint Anthony's Fire* concluded that a form of ergot that "logically has to be akin to LSD" was the likely culprit but that we may never know for certain because toxicologists and doctors could not reach an agreement. Citing the opinion of toxicologists, Fuller asserts that the symptoms exhibited by victims in Pont-Saint-Esprit were not consistent with mercury poisoning (Fuller, 1969; Schpoliansky, 2010).

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In his 2009 book, *A Terrible Mistake*, journalist Hank P. Albarelli Jr alleges that the Special Operations Division of the Central Intelligence Agency (CIA) tested the use of LSD on the population of Pont-Saint-Esprit as part of its MKNAOMI chemical behavior program in a field test dubbed Project SPAN. According to Albarelli, the ergot contamination explanation has been challenged and "ruled out" (Schpoliansky, 2010; Thomson, 2010).

Albarelli wrote that the ergot explanation was based upon the findings of biochemists dispatched to the scene from the nearby Sandoz Chemical Company (now Novartis), based in Basel, Switzerland" (Albarelli, 2010).

Albarelli alleges that even the project name is a veiled reference, because "pont" is French for "bridge." (Schpoliansky, 2010) Albarelli cites numerous declassified U.S. documents—some of which directly mention Pont-Saint-Esprit " (Schpoliansky, 2010; Thomson, 2010). According to Albarelli, ergot poisoning was a cover story. Referencing declassified documents, he writes:

"biochemists [were] dispatched to the scene from the nearby Sandoz Chemical Company in Basle, Switzerland. Included in the contingent from Sandoz was Dr. Albert Hofmann, the man who had first synthesized LSD on November 16, 1938. At the time...only a handful of scientists worldwide, estimated to be no more than eight-to-ten, knew of the existence of the man-made drug LSD. ...[and] virtually nobody in France in 1951, apart from a select few officials at Sandoz Chemical, was aware that the company was secretly working closely with the CIA (Albarelli, 2010)."

In 2010, Kaplan dismissed Albarelli's theories and assertions, although agreeing that ergot contamination is not the explanation for the incident (Thomson, 2010).

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FIN

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DIAMONDS IN THE ROUGH:

Entheogenic Coprophilous Fungi in Alchemical Literature

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ABSTRACT

In 1995, taking investigative cues from Wasson, Hofmann, and Ruck's 1978 work, *The Road to Eleusis: Unveiling the Secret of the Mysteries*, Clark Heinrich published a remarkable book titled *Strange Fruit: Alchemy, Religion, and Magical Foods*, updated in 2002 as *Magic Mushrooms in Religion and Alchemy*. As the titles reflect, Heinrich's primary concern was to explore the possible use of magic mushrooms – specifically, the mycorrhizal *Amanita muscaria* – in Alchemical works (Fig. 1). The evidence Heinrich amassed is both exhaustive and convincing. However, Heinrich provided no mention of the potential role that coprophilous psilocybian fungi may have played in Alchemy. That seemed strange considering an overabundance of references in Alchemical literature in regards to the lapis philosophorum or 'stone of the philosophers,' a legendary substance with astonishing powers, supposedly able to transform metal into pure gold or produce an Elixir of Life, that made a drinker immortal." Such a potion could have been of a psilocybian nature, derived from a species of psilocybian dung-fungi. There are some psilocybian species known to produce underground, a compact mass of mycelium known as sclerotia also referred to as magic truffles and philosopher's stones. Those truffles contain pure psilocine and psilocybine. To further understand why dung fungi, we need to examine some of the documented historical evidence regarding accidental ingestions of psilocybian dung-fungi from the past.

Keywords: Alchemy, philosopher stones, coprophilous fungi, *Psilocybe* spp., *Panaeolus* spp., *Copelandia* spp., *Gymnopilus* spp., *Amanita* spp., and *Claviceps purpurea* sp.



Fig. 1. *Amanita muscaria* next to a Birch tree, Seattle, Wa. Photo: Courtesy of John W. Allen

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The earliest references to the use of mushrooms that caused inebriations in humans occurred in the eastern Mediterranean region of ancient Greece (1500 BCE–4th century CE). Initiates in the Eleusinian mysteries drank a secret potion known as kykeon; an entheogenic drink that reportedly was made from *Claviceps purpurea* (Fr.) Tulane (ergot of rye). Such activities were known to occur at the Temple of Dionysus (Wasson, 1986). And on the other side of the world in ancient India more than 2000 years ago, a potion referred to in the Vedic hymns as ‘Soma’ was believed to have been a mushroom, most notably, the brilliant crimson red species, *Amanita muscaria* [L.] Lam. (Lamarck, 1783) (Unsigned, 2005; Wasson, 1968). And interestingly, those fungi, *C. purpurea* (ergot of rye) and *A. muscaria* were purposely ingested for their entheogenic properties.

So when all is said and done, those entheogens were considered to be sacred to those who consumed them as a holy sacrament while others throughout history experienced visual disturbances that caused those who had accidentally consumed such fungi to believe that they had been poisoned and would soon die. Such was the fate of those who had no knowledge of the species that they had accidentally consumed and had mistaken as a species that would serve as a supplemental source of food. Of course, there were those who, after the initial onset of the effects of a psilocybian inebriation, probably came to the conclusion that they were not as bad off as they had once believed they were while under the influence of the mushrooms they had eaten. And yes, once they had decided that death was not eminent, they later might have decided to experience

the ineffable hallucinogenic and at times euphoric effects once again.

Accidental inebriations in humans and animals from both psilocybian and *Amanita* fungi have been reported and/or documented in the literature dating back to more than 2 millennia. The earliest references involving the accidental and/or purposeful ingestions of fungi that brought about a certain kind of cerebral mycetism in humans; a form of mushroom poisoning that did not cause death but was of a hallucinogenic nature, occurred during the Chin Dynasty in 2nd century China (Yu, 1959; Li, 1977).

The earliest known report of an accidental ingestion and subsequent treatment for someone afflicted with the Pseudobulbar affect (PBA) known in the Chinese pharmacopeia as the ‘laughing sickness,’ is considered to be an emotional incontinence; a type of emotional disturbance characterized by uncontrollable episodes of crying and/or **laughing**. In this incident from China, the suspected mushrooms that caused this sickness [sic!], was either a species of *Panaeolus* or *Gymnopilus*, presumably *Gymnopilus spectabilis* (Fr.) A. H. Smith. As noted above, this poisoning and subsequent treatment for those afflicted with the ‘laughing sickness’ occurred in China in the 2nd century during the Chin Dynasty (Yu, 1959; Li, 1977). Similar reports of inebriations due to the ingestion of either a species of *Panaeolus* (alleged to be *Panaeolus papilionaceus*, but was probably *Pn. cinctulus*) and/or a species of *Gymnopilus* (Probably *Gymnopilus spectabilis* also occurred in Japan in 1911 (Sanford, 1972; Wasson, 1973).

In many of the reports concerning *Panaeolus* species, they are known primarily as dung-

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inhabiting species that can readily adapt in such carious habitats from composting hay mixed with horse manure, straw, and stable shavings, as well as appearing in mulched garden beds of alder, maple, and in other hardwood products; or from fruiting due to spores being introduced from liquid fertilizers into top soils over laid with woodchips (twigs, stems and branches), and in the fresh or decomposed manure of cattle (*Bos*), and in lawns; especially in a newly-sodded fertilized lawn (Fig. 2).



Fig. 2. *Panaeolus cinctulus* in manure of cattle. Austria. Photo: Courtesy of PilzePilze..

Accidental ingestions of psilocybin fungi have been well documented throughout history in the academic literature in numerous diverse sundry fields of academic studies. Until, 1957, not much was known about the hallucinogenic mushrooms of Mexico until an amateur mycologist, R. Gordon Wasson, brought to the attention of Western Civilization a tale described as part of a series in *Life Magazine* (Fig. 3), titled on the cover as, *Great Adventures III: The Discovery of Mushrooms that Cause Strange Visions*. What is

strange is that no one recalls what the earlier other two “Great Adventures, I and II” in *Life Magazine* were prior to the mushroom discovery which was a picture essay, *seeking the Magic Mushroom* by R. Gordon Wasson.³

While R. Gordon Wasson and his photographer Alan Richardson were the 1st Westerners not only allowed to participate and partake of the sacred fungi, others who, over the past 100 years, were not so lucky; having accidentally consumed such fungi as a source of food rather than as an inebriant used to alter their consciousness.

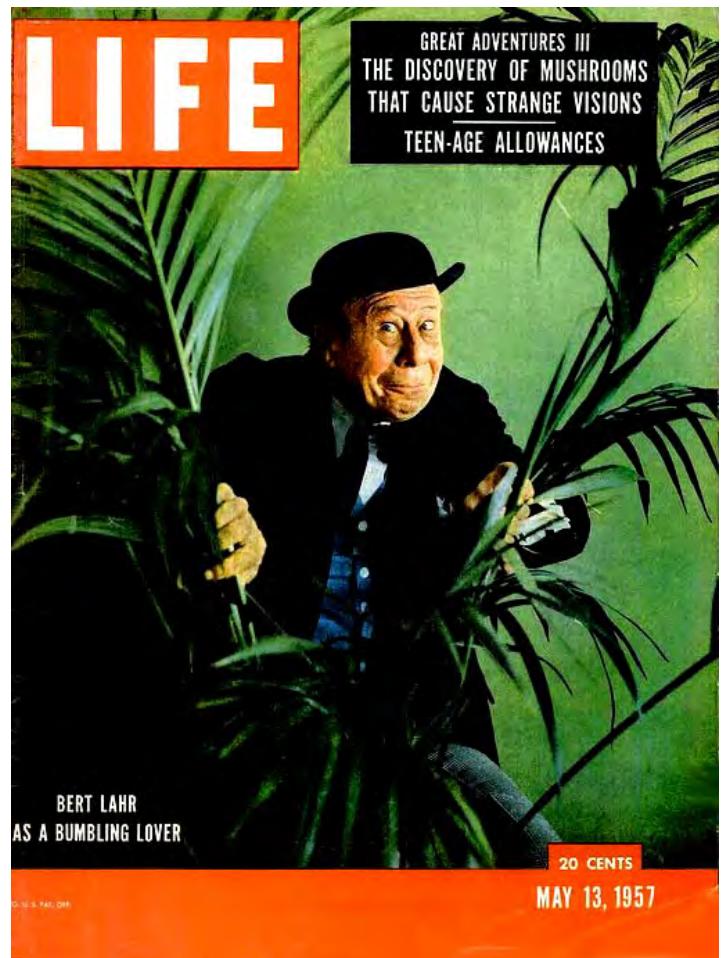


Fig. 3. Life Magazine, 13 May, 1957.

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Although many hunters of edible species of fungi who had sought mushrooms as a food source had on occasion mistakenly consumed an entheogenic species of fungi, some actually assumed that they were going to die from mushroom poisoning. However, some of

those inebriated shrooms later changed their minds after the initial rush of the on-come of the effects had occurred. One woman later remarked that “if this is the way one were to die from mushroom poisoning then she was all for it (Walters, 1965).”

In that particular case of inebriation, the species involved was the bitter fungi, *Gymnopilus spectabilis* (Fr.) A. H. Smith (**Fig. 4**), A species whose name was change to that of *Gymnopilus junonius* (Fr.) P. D. Orton, a hallucinogenic species that macroscopically resembles the very much-prized edible species, *Armillaria mellea* (Vahl.: Fries) Quélet, known as the ‘honey fungi.’ *G. junonius* was referred to in Japanese folk tales as the ‘big laughing’ gym, or in Japanese as ‘O-war-i-take’ (Kawamura, 1918; Sanford, 1972; Wasson, 1973).



Fig. 4. Bluing in *Gymnopilus spectabilis* (Fr.), also known as, “Big Laughing Gyms.” Photo: Courtesy of Jared McRae. Texas. Very Common throughout Europe.

Now we come to a particular incident that appeared in the Sept. 18th, 1914 issue of *Science Magazine* by a botanist who used the name of ‘Mr. W’. In this paper, Mr. W. had ingested some fungal specimens for research purposes.¹ It should be noted that the mushroom consumed by Mr. W. was alleged to have been the coprophilous species, *Panaeolus papilionaceus* Fr.) Quél., referred to as the ‘butterfly’ fungi (**See Fig. 5**). However, that species is not an active psilocybian mushroom. At the time that this incident occurred, the species was obviously misidentified and the actual species responsible for the inebriation was most likely the common ‘weed’ mushroom, known as *Panaeolus subbalteatus* (Berk. & Broome) Sacc. That was recently renamed as *Panaeolus cinctulus* [Bolton] Sacc.).

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In 2006, German mycologist Ewald Gerhardt published a revised monograph of Gyorgy-Miklos Ola'h's, *Le Genre Panaeolus* under the title of, *Taxonomische Revision der Gattungen Panaeolus und Panaeolina (Fungi, Agaricales, Coprinaceae)* in an issue of the *Bibliotheca Botanica*; Gerhardt had studied the species of *Panaeolus* from 18 countries on 5 continents. That was when Gerhardt learned that *Pn. subbalteatus* was first identified as *Agaricus cinctulus* Bolton in the year, 1791.



Fig. 5. *Panaeolus papilionaceus*. Photo: Courtesy of John W. Allen. Tumwater Compost Heap, Wa.

Seventy years later in 1861, mycologists Berkeley & Broome named the species as *Agaricus subbalteatus* Berk. & Broome. And then in 1887, mycologist Pier Andrea Saccardo had renamed it a third time as *Panaeolus subbalteatus* (Berk. & Broome) Sacc. After Saccardo placed the species into the genus *Panaeolus*, the species was then discovered or renamed by others a total of 11 times between 1887 and 1939. In early 1916, renown mycologist William Alphonso Murrill reported *Pn. subbalteatus* as *Panaeolus venenosus* sp. nov., Murr. Yet, Seven years later, Murrill discovered and reported the occurrence of *Psilocybe caerulescens* Murrill near Huntsville, Alabama. That was several decades prior to its discovery by Roger Heim in Oaxaca, Mexico as noted by R. Gordon Wasson in the May 13th issue of *Life Magazine*.

That very same year in 1916, Murrill published a paper describing the new species as *Pn. venenosus*, not realizing that it had been previously named as *Pn. subbalteatus*. In his descriptive paper of the new species, Murrill also reported on an accidental inebriation that he reported as being a 'near fatal' poisoning by a Mrs. Rufus Hatch and four members of her family. This occurred after they had consumed a meal of freshly harvested specimens of *Pn. venenosus* from a garden bed in Pelham Manor, a small village in Westchester, New York (Murrill, 1916).

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At the time of Murrill's mushroom poisoning report, Pelham Manor had a population of less than 1600 people; which is why it was referred to as a village. Today that population is more than 5800 people. Also in that report, Murrill announced that a full description of the effects would be published, however, there are no known published reports of this incident unless it appeared in an early book that Murrill published on poisonous mushrooms. And garden beds were usually fertilized with composting hay to produce maximum growth of vegetables and flowering plants (Fig. 6).



Fig. 6. Compost habitat for *Panaeolus cinctulus*. Västergötland - Sweden. Photo: Courtesy of KnarkKorven.

The very first report of an accidental inebriation caused from the consumption of *Pn. subbalteatus* appeared in an article published in an 1816 issue of the *London Medical and Physical Journal* (see Glen, 1816). In that particular issue is a classic case history of an inebriation of what was identified as *Agaricus campanulatus* L., a synonym for the non-active species, *Pn. papilionaceus*.

Since 1957, *Pn. papilionaceus* was often reported in the scientific literature as being a psilocybin mushroom that was used in ritual

settings by Aztec Priests and their followers during and after the Conquest of Nueva España. In the late 1950s and early 1960s, four independent studies of the chemistry of *Pn. papilionaceus* reported that the species was psilocybin positive. However, by the 1980s, those reports on the alleged activity of *Pn. papilionaceus* written in the early 1960s were soon recognized as being the result of faulty chemistry; known as 'false positives'. Such mistakes were then often reported by other authors in subsequent books published that

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covered the history of the mushrooms and in more than a dozen field identification guides that were published by amateurs and scholars between the years 1970-1980. Presently, in current literature published during the past decade, there are some authors, young and old alike, who still report that *Pn. papilionaceus* is a psilocybin species, and some still report that it is used in the sacred healing and curing ceremonies of the Mazatec Indians in the Mexican State of Oaxaca (Rätsch).

That error was based on two entheogenic reports by a young Harvard University student, Richard Evans Schultes (1939, 1940) who described it as the '*teonanácatl*' fungi of the Aztec priests used in ritual ceremonies at the time of the conquest of Nueva España (Schultes, 1939, 1940).

Unfortunately, *Pn. papilionaceus* is not an active species, and because it had been mentioned on numerous occasions as being an intoxicating species described in numerous case reports of accidental ingestions by humans consuming various species of *Panaeolus* during the late 1800s and early 1900s, it was definitely not the species that was responsible as the cause of the 1815 case study as reported by Dr. Glen in the London Medical and Physical Journal. More than likely the fungus responsible for that inebriation was probably *Pn. cinctulus* (Glen, 1816).

Between 1916 and 1958, several papers of interest were published concerning accidental inebriations that were probably the result of ingesting *Pn. cinctulus* fungi in meals served at breakfast and/or dinner.. Because of an increase in the reporting of accidental ingestions of psilocybin fungi by amateur mushroom foragers seeing a meal, numerous articles describing such inebriations began to appear in various academic journals where

authors had mistakenly misidentified suspected species as being either *Panaeolus* and/or *Gymnopilus* species. .

Michael Levine, a physician who also had an interest in fungi had previously published a paper on *Coprinus* poisoning in the same 1916 issue of *Mycologia* Vol. 8(1) (page 186) that Verrill had described the inebriation of Mrs. Rufus Hatch and her family, in which Levine discussed the 1916 case in London. Levine then decided to study *Pn. venenosus* to determine what was in the fungi that caused such effects as experienced by Mrs. Hatch and others. He spent two years and was unable to find what the active ingredients in the species were (Levine, 1917).

Thus the mushrooms again lay in mystery as to their active alkaloids until Albert Hofmann consumed some in his lab at Sandoz in Vevey, Suisse and then synthesized psilocybine and psilocine from some specimens of *Psilocybe mexicana* Heim (Hofmann, 1958). In 1958, Sam Stein published a paper on his attempt to treat a male subject who had claimed to have experienced homosexual tendencies. Stein sought to treat his young man's malady by using both *pn. venenosus* and *P. caerulescens* as a possible cure (Stein, 1958). Since the species had many synonyms over the past 230 years, it would be appropriate to use the most recent name of *Panaeolus cinctulus* (Bolton) Sacc, as the proper name throughout the rest of this study.

In the early 1900s, *Pn. subbalteatus* (Berk. & Broome) Sacc was known to be a problem for those who cultivated the common grocery store button mushrooms *Agaricus bisporus* (Lange) Imbach. In the late 1800s and early 1900s, *Pn. subbalteatus* was an invasive species that popped up in commercial beds of the

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edible species and was a problem in that the farmers had to hire extra help to ‘weed’ out the *Pn. subbalteatus* from the edible species (**Fig. 7**). Because of the species ability to rapidly over-run a bed of commercial edible species, it became known as the ‘weed’ fungi (Singer, 1958).

While *Pn. subbalteatus* does grow from the dung of cattle (*Bos*), it is not as common as it is in its primary habitat which is rotted hay mixed with horse manure and stable shavings, otherwise known as compost heaps. It is rare to ever find it growing directly on horse manure. However, it may be observed fruiting in the spring and fall months in compost heaps at riding stables and racetracks on 5 continents in most countries around the world.

On occasion, as previously noted, we then recognized that *Pn. subbalteatus* may also appear in a newly sodded lawn; rich in nitrogen and phosphates such as phosphorous. However, when they do appear in a lawn, they usually have no more than one to two flushes and then they are gone; unless lawn care providers keep re-fertilizing the lawn on a weekly basis (**Fig. 8**).

Initiated into the hidden world of “The-Little-One-Who-Springs-Forth” by a Mazatec curandera named María Sabina, R. Gordon Wasson became the first documented Westerner to participate in a traditional *velada* ceremony, where he was administered a powerful dose of the psilocybin-rich species *Psilocybe caerulescens* Murrill. .

Three years later, Swiss chemist Albert Hofmann (1958, see Appendix A), the man who discovered the profoundly hallucinogenic effects of LSD-25 in 1943, was successful in isolating the mushroom’s active compounds,

psilocybin and psilocin³.



Fig. 7. *Panaeolus cinctulus*. In rotted hay compost. Sweden. Photo: Courtesy: KnarkKorven..

The mushroom species that Dr. Hofmann analyzed in his investigations while seeking the identity of their active compounds was, *Psilocybe mexicana* Heim (**Fig. 9**), a species that produces sclerotia which is very potent and is sold in the Nederland Smart Shoppes as the ‘Philosopher’s Stone’ or as “Magic Truffles”.

Furthermore, the Genus *Conocybe* also produces sclerotia in the lab. And it should be mentioned that the sclerotia producing species do not grow directly from dung but rather they grow in manured soil. However, there is ample evidence that a number of alchemists throughout history may have been well aware of the psychedelic potential of certain coprophilous mushrooms long before

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their official discovery by the Western world.

rather in manured soil.



Fig. 8. *Panaeolus cinctulus* in a well fertilized lawn.
Best Buy at North Gate Mall, Seattle, Wa. Photo:
Courtesy of John W. Allen.

And they also may have been aware of other psilocybian fungi that are common in manured lawns, gardens and fields such as the 'liberty cap' species, *Psilocybe semilanceata* (Fr. : Secr.) P. Kumm (Fig. 10).

And of course let us not forget the intense potent bluing species, *Psilocybe cyanescens* Wakefield which is common from the United Kingdom to China; growing during the early fall to winter months in most of the northern hemispheric regions of the globe. This surely must of have been noticed by the alchemists due to the intense bluing of the species in mulched garden beds throughout Europe.

Psilocybe caerulescens being discovered in America in Huntsville, Alabama in 1923 and the more celebrated *Psilocybe cubensis*, the latter being a dung-loving species that was first documented from Cuba in 1906⁴, are not native to European countries, where the famed *P. semilanceata*, better known as the "liberty cap," is instead prone to grow in the damp grasses – that is, not on manure but



Fig. 9. *Psilocybe mexicana* Heim. Photo: Courtesy
of Alan Rockefeller. Mexico.

And of course let us not forget the intense potent bluing species, *Psilocybe cyanescens* Wakefield which is common from the United Kingdom to China; growing during the early fall to winter months in most of the northern hemispheric regions of the globe. This surely must of have been noticed by the alchemists due to the intense bluing of the species in mulched garden beds throughout Europe.

This is an important point as the majority of the Alchemical texts with which we'll be dealing here have their origins in European countries. Conveniently, Europe does happen

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to be possessed of several species of fungi that are both entheogenic and coprophilous species, thus meeting our current criteria: *Psilocybe fimetaria* (P.D. Orton) Watling, *Psilocybe hispanica* Guzmán, and *Pn. cinctulus*. And it is important to note that the domestications of four-legged ruminants began approximately 10,000 bp. And the cattle and horses probably all originated in Asia and Southeast Asia, and then spread through Western expansion into the Indo-Euro countries and eventually to the New World.



Fig. 10. *Psilocybe semilanceata*. Photo: Courtesy of Knarkkorven. Sweden. 2014.

According to researchers, Brian Akers of Pasco-Hernando Community College in New

Port Richey, Florida and the late Gastón Guzmán of the Instituto de Ecología in Xalapa Mexico, a cave painting depicting a bull next to a row of some dozen mushrooms dating around 4000 BCE, the *Selva Pascuala* mural near Villar del Humo in Spain, suggests that Europeans have been using coprophilous,



Fig. 11. *Psilocybe caerulescens* Murr. Also known as the 'Landslide mushroom'. Consumed by Wasson and Alan Richardson in 1955 and later by Tim Leary in Cuernavaca, Mexico in 1960 Photo Courtesy of Alonso Cortez-Perez. Mexico.

entheogenic fungi for a gargantuan 6000 years. Moreover, another mural, discovered by Italian ethnobotanist, Giorgio Samorini, just south of Spain, in southeast Algeria, plainly depicts the psilocybin-containing *Psilocybe mairei* Singer (Syn.=*Hypholoma cyanescens* Maire). These paintings have remarkably been

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dated 7000 to 9000 BCE.⁵

Commonly known as the ‘weed’ fungi or as the ‘banded mottle gill,’ *Pn. cinctulus*, on the other hand, is also common in Europe and may be spotted sprouting directly from the manure of horses that has been mixed with hay and straw compost and stable shavings.⁶ The very same location, cleverly, from where the golem-like homunculus of Alchemy is said to be birthed. The principle goal of the alchemists was the production of the *lapis philosophorum* or philosopher’s stone, the stone of the wise, from the secret *prima materia* or primal matter. Although, Western alchemy was and is largely a DIY process, with one practitioner finding a particular solution to the problems presented in the manuscripts, where another might settle on an altogether different answer to the riddles in the texts. Moreover, many present-day alchemists are content to produce stones from virtually any mineral, metal, plant, or animal, ascribing the value of those stones solely to their planetary signatures. However, for a stone to meet the criteria of the true stone of the wise, planetary signatures alone will not suffice. It must first satisfy specific requirements, chief among them being the conferral upon its possessor of the gift of immortality.

Let it here be said that the alchemical vocation is no vain search for physical immortality. Bodily longevity is not the variety of immortality here described. The famous mythologist, Joseph Campbell, explains rightly that:

“the search for physical immortality proceeds from a misunderstanding of the traditional teaching. On the contrary, the basic problem is: to enlarge the pupil of the eye, so that the body with its attendant personality will no longer obstruct the view. Immortality is then

experienced as a present fact (Campbell, 2008).”

Indeed, the alchemists purport that the stone of the wise has the power to provide its possessor with the knowledge of his very immortal soul. Hence it’s also being called the *stone of projection*. For, the soul of its possessor is the very thing that appears to be projected upon the stone’s proper application. Liberated from its bodily frame, the stone-projected soul is free to roam the so-called *astral plane*, loosed from the limitations of its corporeal container – a concept that has come to be known as an *out of body* experience or OBE.

As the alchemical axiom states, the substance is made “not of stone, not of bone, not of metal (Heinrich, 1995).” That is to say, it comes not from the mineral kingdom and not from the animal kingdom. It must therefore be deduced that this stone is only to be found in the vegetable kingdom. Conveniently, there exists a special class of truly magical plants that actually satisfies the above listed criteria. We speak here of entheogens. As the word implies, entheogenic plants are those which generate an experience of one’s divinity within; that is, entheogens have the potential to facilitate what appears to be the direct experience of one’s own immortal soul; of the continuity of consciousness independent of the mortal frame. And, certain species of magic mushrooms naturally constitute a portion of these plant entheogens.

A note discovered in the back flyleaf of a copy of E.A. Hitchcock’s classic 1875 study, *Remarks Upon Alchemy*, reads:

“the Secret of our Stone...shall shew itself forth as though it bloomed sweetly upon the dunghill. And if you shall ask me what it resembles – I shall say to you that it lives and is to be found in the likeness and form of many things in Nature. For it can be as the Moon

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as has been said – If they say the Moon is blue, we must believe that it is true. – But this only if molested, for the colour of the Moon is white in its naturalistic State.”⁷

What other than a coprophilous psilocybian mushroom species meets the criteria of being at once a living thing in nature that, in addition to ‘blooming’ upon dung, also appears as the moon; that is, round and pale, unless the same has been “molested,” in which case it then turns blue?

Psilocybe hispanica, *P. fimetaria*, and *Pn. cinctulus* are three species of coprophilous fungi, meaning that they can only subsist upon the dung of certain mammalian species. Although pale in their undisturbed state, most psilocybian mushrooms have the unique characteristic of staining blue when bruised or broken (**Fig. 12**). Although the above three mentioned species rarely ever stain blue, *Pn. cinctulus* does stain a light heavenly blue at the base of its stem when lifted out from rotted hay.

This reaction is due to the oxidation of psilocin contained in the mushroom and may serve as an easy identifier for inclined fungus foragers. They may also become blue in age or from severe cold weather at night. A very potent bluing psilocybian species found in manure belongs to the genus *Copelandia* Bresadola. It is common after spring and fall rains in the south of Spain, France, and Italia, fruiting prolifically along the northern regions of the Mediterranean Sea.

There are 6-8 species of *Copelandia* in the genus and *Copelandia cyanescens* (Berk. & Broome) Singer [(Syn.=*Panaeolus cyanescens* (Berk. & Broome) Sacc., is the primary species; occurring in the dung of most four-legged ruminants. This species is very

noticeable with bluing occurring naturally at times from intense winds and a cold frost; producing as many as up to 100 or more specimens in a single manure heap.



Fig. 12: Image of intense bluing in *Copelandia cyanescens*. Photo: Courtesy of John W. Allen.

Copelandia species are potent fungi and in the 1950s were reported in the literature as being the cause of a terrifying inebriation after a mother and her two teenage daughters had consumed a meal consisting of two fresh ounces of *Copelandia cyanescens* prepared in a soup. This unfortunate incident occurred in Menton, France (Heim, Hofmann, & Tscherter, 1966; Pollock, 1976).

As many in the field of Alchemical Studies know, the hexing herbs of the middle ages do share a close association with witchcraft and magic toads. And those toads also feed on psilocybian fungi (**Fig. 13**).

In his book, *Atalanta fugiens*, the Rosicrucian apologist, Count Michael Maier writes,

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“[Every] man ought to take care that he be very well acquainted with those Dragons that are to be joined to the Chariot of Triptolemus before he undertake anything, for they are Winged and Volatile, and if you desire to know them you will find them in the Philosophickal Dung. For they are Dung and generated from Dung, and are that Vessel which Maria affirms not to be Necromantick but that Regiment of your Fire without which you will affect nothing. I have disclosed the Truth to You which I have gathered out of the monuments of the Ancients by incredible labour and the expense of many years.”⁹

Here, Maier informs his reader emphatically that these “Dragons,” without which the alchemist is wholly impotent, are to be found only upon dung, wherefrom they are generated. They are “Winged and Volatile” insofar as they, when unfixed from their dung heap, possess the potential to project the soul of the alchemist into astral flight. Again, without these “Dragons,” the alchemist can accomplish nothing. It is as Morienus has warned:

“The alchemist must “[take] that which is trodden underfoot upon the dunghill; if [he does] not, when [he wishes] to climb the stairs, [he] will fall down upon [his] head.”⁹

The cryptic reference to Triptolemus also is significant. Triptolemus symbolically presided over the threshing floor at the Greater Mystery celebrated at Eleusis, where the entheogenic fungus, ergot, source of the powerful psychedelic compound, LSD-25, was ceremonially separated from its cereal host for the same to be used in the sacred initiatory beverage, *kykeon*. A viable thought-out solution for the awesome wonders witnessed in the torch-lit Telesterion at Eleusis was not offered until 1978, with the publication of Wasson, Hofmann, and Ruck’s

The Road to Eleusis: Unveiling the Secret of the Mysteries. However, the clever count, Michael Maier, seems to have intuitively grasped the entheogenic significance of the Eleusinian mythos long prior.

Furthermore, Triptolemus’ “Chariot” may loosely be likened to the merkabah or ‘throne-chariot’ of Ezekiel’s vision, which is believed by Kabbalists to be the mechanism that propels practitioners into the lofty, celestial regions upon mystical ascension. It is perhaps notable that the visionary prophet, Ezekiel, is said in verse fifteen of chapter four of his book to have curiously made his bread from “cow’s dung.” As one Alchemical commentator phrased it,

“Who is wise, and understandeth this, of which Alphidius saith, that men and children pass her by daily in the streets and public places, and she is trodden into the mire by beasts of burden and by cattle?”¹⁰

A half century later, Welsh alchemist, Thomas Vaughan, aka Eugenius Philalethes, wrote in his notebook, *Aqua Vitae: Non Vitis*, that, “the stone lies hidden in animated dung.”¹¹ In his foreword to A.E. Waite’s *The Works of Thomas Vaughan: Mystic and Alchemist*, “Father of the Beat Poets,” Kenneth Rexroth, says of Vaughan, ‘In the history of alchemy, this is the one author who really, indisputably, gives away the show, divulges the secret.’¹² In the case of the above quotation, we would be inclined to agree. Like Paracelsus before him, Vaughan was also partial to the use of opium in his operations – and possibly even hashish.

Regarding Paracelsus, in A.E. Waite’s book, *The Hermetic and Alchemical Writings of Paracelsus*, we find:

“The natural mumia should be compounded...by its herbs and boleti... For all these are mansions of the

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*supercelestial things.*¹³ In response to this cryptic jargon Waite adds in a footnote:

"Boleti...is a mushroom. Bolitus is the same as Bolbiton, i.e., the excrement of oxen. These explanations will, perhaps, not throw much light on the use of the term by Paracelsus."¹⁴

On the contrary! For those with eyes to see, Waite's commentary has served to throw much light on the use of the term by Paracelsus.



Fig. 13a. A Bufo toad stands guard over his treasure fungus of knowledge. Photo: Courtesy of John W. Allen.



Fig. 13b. Bluing in *Copelandia cyanescens*. 7-10 specimens would be a proper dosage for this species.

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Fig. 14. Image 1 of 3 of the Trismosin's plate.



Fig. 15. Image 2 of 3 of the Trismosin's plate.

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Fig. 16. Image 3 of Trismosin's plate.

Although, even for those without “eyes to see,” the mystery is depicted plainly enough in Salomon Trismosin’s 16th century text, *Splendor solis*, touted by Australian occultist and author, Stephen Skinner, as “the world’s most famous Alchemical Manuscript.”

Along the top of the border of plates 1-3 (**Figs. 14-16**) can be seen two infant-style cherubs handing over to two dark-colored birds what is clearly defined as golden mushrooms. As amateur mycologist, R. Gordon Wasson, observed in a 1979 article for *Afghanistan Journal*, “raven’s bread” is a common epithet for certain psychedelic mushrooms.¹⁵

Psilocybian mushrooms would go on to be immortalized in popular culture by Frank Herbert in his sci-fi novel, *Dune*, which was famously adapted for the screen by both Alejandro Jodorowsky and David Lynch. The *Daily Grail* reported earlier this year that,

“At the time of its publication in 1965, many thought Herbert was making reference to LSD [...] In fact, Herbert was making a reference to psychedelics, in particular his own predilection for magic mushrooms, as [mycologist,] Paul Stamets, explains... Frank went on to tell me that much of the premise of Dune – the magic spice (spores) that allowed the bending of space (tripping) [...] the eyes of the Freeman (the cerulean blue of psilocybian fungi) [etc.] – came from his perception of the fungal life cycle, and his imagination was stimulated through his experiences with the use of magic mushrooms.”¹⁶

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Fig. 17. *Panaeolus cinctulus* in a new freshly sodded lawn. Northgate Shopping Mall. Seattle, Wa.

Herbert's treatment of psilocybin as the agent by which *Dune*'s protagonist achieved his greatness may not be without warrant. In 1966, psychologists, James Fadiman and Willis Harmon, conducted the significant *Psychedelics in Problem-Solving Experiment*.

*"The researchers administered low doses of mescaline...to professional people (i.e., engineers, mathematicians, architects) who were highly motivated to solve a problem they had been working on for three months or more without success. Virtually all of the subjects reported making significant breakthroughs and producing solutions that were validated by independent tests and, eventually, commercial acceptance of their solutions."*¹⁷

A more recent study, conducted by Thomas Anderson of the University of Toronto and Rotem Petranker of the University of York, found that those who had taken "microdoses" of psychedelic drugs, such as LSD-25 and psilocybin, "scored higher on measures of wisdom, open-mindedness, and creativity."¹⁸

We learned in 2014 from the *Journal of the Royal Society Interface* that the method by which psilocybin works its magic in the human brain is by silencing what is known as the Default Mode Network or DMN, the space where one's ego or sense of self is perceived.

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Fig. 18. An Alchemists Dream Crop: Production of the mass cultivation of *Panaeolus cinctulus* for tourist trade in the Nederlands. Photo: Courtesy of John W. Allen.

"[The DMN is] a collection of hub centres that work together to control and repress consciousness. Like the conductor in an orchestra, the DMN polices the amount of sensory information that enters our sphere of awareness, and has been described as the neural correlate of the 'ego'."¹⁹

Silencing this center allows portions of the brain to cross-communicate with sections that otherwise would remain isolated, their signals normally being interrupted by the 'noise' generated in the DMN – hence psychedelics' success in problem solving and inducing novel modes of thought. According to Giovanni Petri, the primary author of the study, psychedelics create what he called a "hyper-connected brain." Indeed, within the psychedelic brain, connections are literally being made by portions of gray matter that do not normally exchange information. Moreover, this act of silencing the brain's 'central hub' also explains the phenomenon of so-called 'ego death,' which is common with large doses of psilocybin and other hallucinogens.

Truly, a similar landmark study conducted by the Beckley/Imperial Research Programme, published in the April, 2016 *Proceedings of the National Academy of Sciences*, shows that LSD, like psilocybin, too decreases communication between the brain regions that make up the Default Mode Network. Dr. Robin Carhart-Harris of the Beckley/Imperial Research Programme explains,

"this effect underlies the profound altered state of consciousness that people often describe during an LSD [or psilocybin] experience. It is also related to what people sometimes call 'ego-dissolution', which means the normal sense of self is broken down and replaced by a sense of reconnection with themselves, others and the natural world. This experience is sometimes framed in a religious or spiritual way – and seems to be associated with improvements in well-being after the drug's effects have subsided."²⁰

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Dr. Carhart-Harris notes that the “experience is sometimes framed in a religious or spiritual way.” This point is significant as there currently exists no standard by which to medically distinguish spontaneously occurring spiritual visions and experiences and those induced by the ingestion of an entheogenic plant such as magic mushrooms. As Johns Hopkins Medicine demonstrated in 2006, psilocybin meets all of the criteria for a “full mystical experience.”²¹

Furthermore, psilocybin, like all other true hallucinogens, is not addictive. In fact, the 2019 Global Drug Survey found that psilocybin mushrooms are the safest recreational [Sic!],-[ludible] drug currently known. This is not surprising. For, chemically, psilocybin is 4-phosphorolox-N,N-dimethyltryptamine, essentially making it an orally active form of DMT – a powerful hallucinogenic compound that is in fact endogenous, meaning that it is produced within and by the human organism.²²

Magic mushrooms, indeed the Alchemists were no strangers to the effects of psychoactive and entheogenic plants and substances. From Raymond Llully’s discovery of alcohol distillation, to Paracelsus’ aforementioned partiality too or propensity for opium, to Avicenna’s fondness for hashish, to Cagliostro’s use of *Acacia* elixirs, the Alchemists were completely preoccupied with the hidden virtues of plants, herbs, and fungi. And, as I noted above, certain entheogenic plants meet all of the classic criteria attributed to the *lapis philosophorum* and other elixirs in some schools of Alchemy.

The wonders which accompany the Alchemist following his production and application of the stone are said to be veritably beyond the mind’s capacity to conceive; beyond the tongue’s ability to articulate. Indeed, the entheogenic experience is ineffable in the fullest sense of the word. To quote once more from E.A. Hitchcock’s anonymous but learned commentator,

*“And such are the Wonders of Heaven displayed, that when they do shew forth their Glory their Virtue is not within the Power of Man to speak, for such spoke Paul who was caught up unto the Third Heaven where he saw that which cannot be spoken, nor imagined. Its Vitality is like a Tincture which doth elevate the Mind to sublimity of Thought, greater than can be imagined.”*²³



Fig. 19. *Panaeolus subbalteatus*. Photo: Courtesy of KnarkKorven.

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Fig. 20. Common Compost heap of Horse manure, straw and stable shavings. Trail's End Riding Stables, Tumwater, Wa.

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Fig. 21. *Panaeolus cinctulus* in crushed horse manure and stable shavings. Photo: Courtesy of Knarkkorven.



Fig. 22. An Alchemists Dream Crop 2: *Panaeolus cinctulus* Mass Production. Tiel Nederlands. Six tiers producing 20,000 kilos per. month. Photo: Courtesy of John W. Allen.

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3. Hofmann.
4. Earle, pp. 240–241.
5. Wasson in Life Magazine.
6. Stamets, p. 82.
7. Pers. Comm. with Heinrich.
8. Maier.
9. Jung, p. 430.
10. Ibid., p. 378.
11. Dickson.
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13. De Lawrence, p. 342.
14. Ibid., p. 357.
15. Wasson, Kramrische, Ruck, & Ott, p. 136.
16. Greg.
17. Harman.
18. The Conversation.
19. Carhart-Harris.
20. Ibid.
21. Griffiths.
22. Solon.
23. Ibid.

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APPENDIX A
Mushroom Madness

Time Magazine, 16 June 1958. Pages 44, 47.

In the spotless Basel laboratories of the Swiss Drug company Sandoz A. G., a short, trim scientist of 52 performed a strange experiment. Research director Albert Hofmann meticulously dissolved five milligrams of white crystals in a test tube of water. Then, while tense assistants looked on, he swallowed the potion, lay down on a couch and waited. Within an hour Hofmann began to report: "I am losing my normal bodily sensations. . . My perception of space and time is changing. . ." Finally: "Now, as I close my eyes, I see a wonderful but indistinct kaleidoscopic train of visions. They are vividly colored."



Fig. 22. Albert Hofmann who has mushrooms on his mind. Graphic Art: John W. Allen.

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Alone with his visions. Experimenter Hofmann stayed on the couch three hours until the drug's effects wore off. He got up feeling fine. After two years of delicate lab work, he announced last week, Hofmann had managed to isolate a mysterious substance—the chemical that has caused men of many races through many millennia, to have otherworldly visions after eating certain kinds of mushrooms.

For Hofmann, such chemically induced visions are not new. He is famed among the world's biochemists and psychiatrists because in 1943, by accident, he absorbed (probably through the skin of his fingers, he now speculates) an infinitesimal amount of a potent chemical. For a while it made him wacky. He identified it as lysergic acid diethylamide, now universally known as LSD-25. It has proved an invaluable weapon to psychiatrists seeking to reproduce symptoms like those in schizophrenia (*Time*, Dec. 19, 1955).

Researcher Hofmann moved from LSD to mushrooms thanks largely to Ethnologist (and a J.P. Morgan vice president) R. Gordon Wasson and his Russian-born wife, two dedicated, medical-minded mushroom eaters. The Wassons have voyaged all over the world seeking ritual devotees of exotic mushrooms and sharing their hallucinations, reported on their experiences in *Life* and in a \$125 book (only 500 [512] copies printed), *Mushrooms, Russia and History*. A French companion on their travels sent Hofmann specimens of one of the most potent mushrooms, *Psilocybe mexicana* [*Time* editor's spelling of *Psilocybe*]. From its little brown umbrella, perched on a delicate stem, Hofmann isolated the pure chemical (he calls it psilocybin) that induced his experimental hallucinations.

Sandoz will release psilocybin only to highly reputable medical investigators. To them, it means that they can now use a third chemically pure substance---in addition to LSD-25 and mescaline---to induce controlled symptoms like those of uncontrolled mental illness. From such studies they hope to find medical cures.

FIN

In Portugal, evidence shows that some modern day witches used mushrooms for magical enchantments (Graves, 1960, Heim, 1963; Emboden, 1979). Roger Heim had once been given some specimens of the Portugal fungi and later identified them as *Panaeolus papilionaceus*.

THE HALLUCINOGENIC FUNGI OF COLOMBIA, A NEW PERSPECTIVE:
An Historical Examination of Possible Past Cultic Use by the Prehispanic Muiscas and Current Ludible
Use by Tourists and Local Populations in the Department of Boyacá

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ABSTRACT

Richard Evans Schultes was the first to suggest the possibility that there may have been a cultic use of mushrooms in South America, specifically the Northeastern Andes region of the Amazon. Schultes and Hofmann noted that a Jesuit priest had mentioned that the Yurimagua of Northeastern Andes in Peru used a potion, possibly made from a tree fungus [perhaps a species of *Psilocybe*]. Schultes offered little information except that he mentioned the drink might have included, *Psilocybe yungensis* as part of the mixture. Schultes' references of that tree fungus appeared in *The Botany and Chemistry of the Hallucinogens* and later in an article describing some of the mushroomic gold pectorals on display at the Museo del Oro in Bogotá. In recent years, Juan Camilo Rodriguez Martinez, an amateur ethnomycologist, was residing in Bogotá, Colombia. During this period, while researching the various gold pectorals and pendant artifacts on display at the Museo del Oro in Bogotá, a particular gold pendant piqued JCRM's curiosity. It appeared that there seemed to be a possible connection between those artifacts and a few specific species of the known neurotropic fungi that occurred in Colombia. Richard Evans Schultes and Alec Bright were the first Westerners to bring to the attention of Western Civilization, news of the existence of the gold mushroomic artifacts, and pendants on display at the Museo del Oro in Bogotá, Colombia. And now it is JCRM who suggests that the ancient Muisca priests may have once used entheogenic mushrooms in a cultic manner in prehispanic Colombia. And quite possibly, the epicenter of that cultic activity occurred primarily in and around the municipality of Villa de Leyva in Boyacá, Colombia, as well as in other Departments in the surrounding regions. The Muiscas are an indigenous people native to Colombia. They are the original inhabitants of what is now the city of Bogotá and the surrounding countryside. That also includes the Cundiboyacense High Plateau to the south of the Department (State) of Santander, one of the 32 States in this beautiful country. In Colombia, botanists are aware that many entheogenic plants have medicinal value and are of spiritual significance amongst the indigenous populations who use such plants in ritual ceremonies, yet there appears to be little research in Colombia concerning the past or present use of psilocybian fungi. However, there is an online plethora of data on the ludible use of entheogenic fungi by foreign tourists. Many young foreigners come to Colombia seeking such fungi, yage, and other native medicinal entheogenic plants, often searching for new ways to communicate with God or to have some mind-altering ludible experience. The authors suggest that such ludible use of entheogenic plants, especially

psilocybian mushrooms, are beneficial to those who wish to discover and understand the secrets derived within a mushroom experience. It is essential to study what impact the widespread ludible use of entheogenic fungi have on the Colombian people who use them, moreover, how did the indigenous people in Colombia become aware of these fungi? To better understand their current popularity, we must examine precisely how knowledge of these mushrooms spread from their mid-1950s discovery in Oaxaca, Mexico to the United States and Australia, throughout the UK, Europe, and then to Colombia. More than fifty years have passed since R. Gordon Wasson and his photographer Alan Richardson became the first Westerners to consume a Mazatec ceremonial dose of a sacred mushroom (*Psilocybe caerulescens* Murr.). Their experience was shared the following morning on July 5th, 1955, by Wasson's wife Valentina Pavlovna and their 17-year-old daughter Masha. Over the next three years, other scholars soon followed in the footsteps of the Wasson's, all bound by a single shared common interest, their desire to experience the magic of the sacred fungi. Wasson eventually led other researchers into Mexico (Albert Hofmann, Roger Heim, and Rolf Singer), and during the 1960s, others also sought out the mushrooms and wrote about their experiences. Most notable were the Greek historian and scholar Robert Graves; Harvard lecturers Timothy Francis Leary and Richard Alpert [Baba Ram Dass]; creativity scholar Frank Barron; and anthropologist-historian-linguist Gerhardt Braun; all disciplined in various, sundry fields of studies related to the mushrooms. These scholarly students and teachers wrote of their mushroomic experiences, describing their effects with care and respect. Thanks to their perspectives, a new field of science, 'ethnomycology,' began to record a modern history of the sacred fungi. Before long, numerous papers on the entheogenic use and ludible use of the mushrooms were published. So began the spread of psilocybian knowledge around the globe. Richard Evans Schultes was the first person in modern times to explore the Amazon, where he spent some 13 years exploring the river regions and discovered over 24,000 plants new to science, of which 83 were hallucinogens. Schultes was also the first to suggest a possible past use of a tree fungus in Peru, basing his theory on the existence of mushroomic-shaped gold pectorals at the Museo del Oro in Bogotá. Harvard University soon followed, including alternative medicine guru Andrew Weil and Colombian-Canadian anthropologist and ethnobotanist Wade Davis and Timothy Plowman, the latter two were both students of Schultes. By the early 1970s, Bogotá became known worldwide as a safe city to experience the magic of the mushrooms and many other entheogenic plants of Colombia. However, this introduction of fungi from the west to the people of Colombia has opened a much-renewed interest in learning if mushroom cults once flourished in prehispanic Colombia.

KEYWORDS: Muiscas, Chibcha, gold pectorals, man-bats, *Psilocybe antioquensis*, *Psilocybe caerulescens*, *Psilocybe cubensis*, *Amanita muscaria*, soma, hallucinogenic, ludible use, America, Colombia.

FORWARD

There are dozens of published articles in the academic literature describing numerous species of entheogenic fungi from Colombia. Moreover, there exist several hundred mushroomic gold pectorals and pendants on display at the Museo del Oro in Bogotá. Those published papers and the mushroomic artifacts suggest that mushroom cults probably existed in prehispanic Colombia. Because of those two facts, the indigenous peoples of Colombia, had to have been aware that such fungi occurred within their environmental surroundings prior to the Conquest of the New World. The authors hope that the information put forth herein will inspire others to follow in their footsteps and in the footsteps of those who came before. Present studies of the entheogenic macrofungi of the land, as well as the artifacts found in many of the archaeological diggings in Colombia are lacking, especially studies that could prove that mushroom cults did flourish in Colombia and that both *Amanita* and *Psilocybe* species were the causative sources that guided the workings of the Man-Bat cults. More research is needed in exploring the possibility that the priests of the Man-Bat cults of the Muiscas did employ entheogenic fungi in a cultic setting before the conquest. In addition, evidence is presented on the influence and spread of psilocybian consciousness throughout the world regarding such ludible use of these fungi which began in Oaxaca, Mexico in the mid-1950s and soon spread throughout the East Coast and Southern States of America to Australia and then to the UK, and in 1976, two high courts in the United Kingdom ruled that ‘psilocin and psilocybin were chemicals and mushrooms were mushrooms (vegetative material)’ and as such were not illegal by law. By 1973, the ludible use of psilocybian fungi became quite popular and soon began to spread throughout the PNW (Pacific Northwest) of the U.S.A. During the next 7 years, more than one dozen field guides and 6 manuals on the identification and cultivation of *Psilocybe* spp., had been published in the PNW. After those books appeared in print, the ludible use of the fungi then spread back into Mexico, down to Central America (Guatemala) and into South America. Those field guides made it possible for tens of thousands of young adults and backpackers, an incentive into traveling long distances from their perspective homes to the jungles of Mexico, Guatemala, Colombia, and even Brazil, informing the world with the knowledge that these mushrooms they had read about occur in their countries. Even today, the ludible use of psilocybian fungi in Colombia by young adults had fast become a popular fad amongst young and old alike. However, problems brought to the local indigenous people in Bogota by foreign backpackers was just as concerning to the local inhabitants as it is to the law enforcement officials.



Image 1. A graphic representation of a mushroom visual. Image in KPT. Courtesy of John W. Allen.



Psilocybe caerulescens Murr. Photo: Courtesy of Alan Rockefeller.



Image 2. A detail from a hand-painted batik representing *Amanita muscaria*. Photo: Courtesy of by John W. Allen.

INTRODUCTION

Mushrooms have always fascinated humans throughout the ages. One species, in particular, was *Amanita muscaria* [L.] Lam. Hooker (Lamarck, 1783), a species featured in many classical works of art, often appearing in children's fairy tales, as well as on postcards dating from the mid-1700s into the Roaring Twenties. Nowadays, one can view *A. muscaria* in cinematic scenarios generated for the children's 3D films such as the two Tim Burton film versions of Lewis Carroll's classic novels, *Alice in Wonderland* and *Alice through the Looking Glass*. Both films featured images of hundreds of specimens of wild *A. muscaria* fungi. Those images of the beautiful red and white-capped *Amanita* species were viewed by Alice once she had crossed the threshold between her reality and a fantasy world of wondrous sights, the likes of which she had never seen before; a world that became known as Wonderland. *Amanita muscaria* was also abundantly displayed in the 2019 film, *The Nutcracker and the Four Realms*.

For the past 400-years, poets and painters alike have long fallen in love with the charm of that mushroom and its iconography. There have been numerous paintings often depicting the beauty of the *A. muscaria* mushroom on canvas, and in the literature, it also provides support of the love that artists and authors have concerning this species.

Sometimes entheogenic fungi are even present in our wildest dreams. There is also an uncanny association between the penial shape

of certain wild fungi that sometimes resemble the genitalia of both the male and female sexual organs. For example, when a mushroom first appears rising from the earth, it will resemble the reproductive organ of a male, which is phallic in its many shapes. A similar observation regarding the breasts of the female species is that they, at times, resemble the cap shapes of *Amanita* species, as well as the cap shapes of some species of *Psilocybe*, particularly the cap shapes of the dung-inhabiting species, *Psilocybe cubensis* (Earle) Sing.

JWA questions the sacredness given to cattle in India and asks all to consider, "why are the Brahman cattle, and all cows in India regarded as sacred? Could it be that in their past history, certain segments of Hindu society may have once participated in a mushroomic cult that consumed certain entheogenic coprophilous species of fungi? Mushrooms such as *Copelandia* and *Psilocybe* species harvested from the manure of cows? So would that be an indication that the cattle were considered to be holy as they are the propagators of the entheogenic mushrooms that occurred in the manure of the cow?

In ancient India, as in other cultures around the world, Cattle were often sacrificed to the Gods. However, today, cows in India are not sacrifices, nor are they worshipped or considered as being gods, yet in today's modern India, most Hindus are vegetarians, and they believe that the cow is a sacred symbol of life and as such, they certainly

deserve to be protected and revered. They also denote “purity and non-erotic fertility. Other facts teach us that the Hindu people consider the cows to be very generous, docile creatures that share and give to humans – milk, cheese, butter (or ghee), urine, and dung.

The first three are consumed and are essentials used when worshipping the various Hindu gods. And the last two of those five essentials can be used in religious devotion or in penance or burned as fuel. JWA believes that the cows may once have become sacred because they were the ‘propagators’ of the sacred mushrooms that grew from the manure of the cow. And possibly the urine, which is mentioned as one of 5 essential gifts that the cows bequeath to the humans, may have eluded to the ‘Soma’ medicinal drink of the ancient Aryans.

In regards to the Hindus propensity to drink the urine of cattle because they believed that the urine was a medicinal drink that held a special significance to those who partook of the ‘Soma’ drink may have originated from those in ancient India who once consumed a potion referred to as in the 9th and 10th Mandala of the Vedic Hymns (Unsigned. A; Unsigned B; Unsigned, 1995; von Bibra, 1995; Crowley 2017; Wasson, 2968). And we also must take notice of the mushroomic shaped-cloud that appears in the distance, always present in the aftermath of a nuclear detonation.

For several decades, words were spoken in silence that there might exist a mushroomic

cult, hidden somewhere in Mesoamerica where certain species of unidentified fungi are used in sacred healing and curing ceremonies and have been hidden from public scrutiny since the time of the conquest.

The rediscovery of the use of these mushrooms came about when a New York banker and Wall Street financier, R. Gordon Wasson (Fig. 1a) had read two papers by Harvard ethnobotanist, Richard Evans Schultes (1939, 1940), who wrote about the use of mushrooms known amongst the Aztec Priests as ‘teonanácatl.’ ‘Teonanácatl’ is a Nahuatl Indian word that Schultes first described as a ‘narcotic’ in his 1939 and 1940 published historical documents on the use of these fungi during and after the conquest of Nueva España. Later interpretations by many scholars and authors translated ‘teonanácatl’ as meaning “Flesh of the Gods” or “God’s Flesh,” yet Wasson interpreted the word as meaning either ‘Wondrous’ or ‘Visionary’ mushrooms. .



Fig. 1a. R. Gordon Wasson. Photo: Courtesy of John W. Allen.

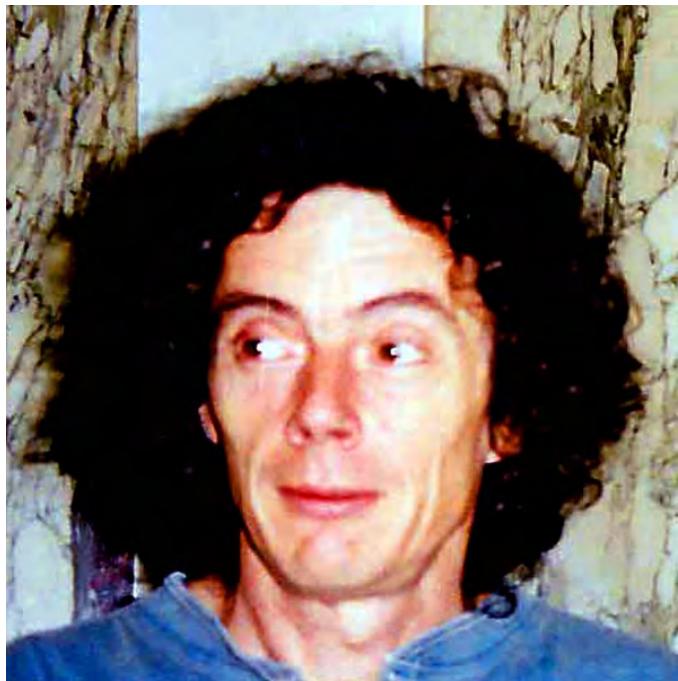


Fig. 1b. Jonathan Ott. Photo Courtesy: John W. Allen.

The epithet, ‘Magic Mushrooms’ came from a *Life Magazine* editor (Wasson, 1957; Stafford, 1977). Ethnopharmacologist Jonathan Ott (**Fig. 1b**) wrote in a Pers. Comm. (Ott, 1999) that the term “magic mushrooms” was a misnomer and withal deprecatory-, suggesting that “wondrous” or “visionary” or “psychoptic mushrooms” would be more appropriate and noted that ‘teonanácatl’ did not mean “God's flesh.”

Ott insisted that “this was a deliberate mistranslation by a friar designed to shock and enrage his superiors in Spain, and to justify the brutal suppression of this harmless indulgence. The word merely means “divine mushrooms” or “wondrous mushrooms”- [which] RGW opted for the latter in the tide of his epochal book, *The Wondrous Mushroom* (Wasson, 1980).

Later Jonathan Ott, along with several other scholars, created a new epithet to be used when describing such plants used in ritual ceremonies as entheogens (Ruck et al., 1979; Ott, 1996).

Fungal species now described as entheogens belong to the genus *Psilocybe* and are employed in healing and curing ceremonies by a shaman, or curanderas, brujos, sabias, and other medicine men and women from six groups of indigenous natives of Mesoamerica (Guzmán, 2018.) The word entheogens became one of the many themes that researchers from the past five decades have used when attempting to explain from different points of view, a term that described the use of a hallucinogenic plant or a species of mushroom for religious purposes. The writings of Richard Evans Schultes (Schultes, 1939, 1940); Eunice V. Pike and Florence Cowan (Pike, 1959, 1960, Pike and Cowan, 1959); R. Gordon Wasson (1968, 1980); Valentina P. Wasson (1957,); Valentina P. and R. Gordon Wasson (1957); Robert Graves (Graves, 1957, 1958, 1960, 1961, 1962); Andrew Weil (1973, 1975-1976, 1980); Timothy Leary (1968, 1983); Jonathan Ott (1993, 1996, 1999); Jonathan Ott and R. Gordon Wasson (1983); Alvaro Estrada (1976[1981]); Terence McKenna (1984, 1992); Dennis McKenna (2012), John Allegro (1970); Andrija Puharich (1974 [1959]), and many others then set the basis for opening many new doors of opportunity into unlocking the secret of ‘teonanácatl’ (the sacred mushroom species) that the indigenous peoples of

Mesoamerica had kept secret from the West for over 450 years and the secret of the ‘soma’ (mushroom) dating back to the Vedic Hymns of the past 2000 years. And therein lies a mystery, as a plethora of endless unanswered questions about hidden cultures of the past, began to unravel like ‘a spiral without an end’, the rediscovery of the sacred mushrooms has created a continuous flow of new research that has spread into the academic and literary world ever since R. Gordon Wasson had announced his mushroomic findings of a mushroom cult in Mexico (Wasson, 1957). One always needs to be reminded that at the beginnings of the 20th century, few people from Western Civilization were aware of the use of psychedelic mushrooms.

A Brief History of the Widespread Awareness of Psilocybian Literature throughout the Academic Community

R. Gordon and Valentina Wasson, writing in an issue of the “*Garden Journal*”, wrote that in the late 1800s "only a handful of scholars knew [the mushrooms] had ever existed, and a few of them had mentioned the mushrooms in books that they wrote for other scholars to read. (Wasson, 1958)"

These five authors whose published works are listed directly below were all written over 150 years ago. Before these five references, there were only about 75 references in the literature

that referred to the entheogenic mushrooms, and those were from the Friars and Monks who recorded the histories of Nueva España.

Bancroft, Hubert Howe. 1874-1876. *The Native Races* vol. 2:360. 1874-1876. 2 volumes.

Berra, Manuel Orozco y. (circa 1870s). *Historia Antigua y de la Conquista de México*-Vol. 1: 274. Vol. 2:111, 375, 402, 437.

Bourke, John Gregory. 1891. *Scatologic Rites of all Nations*: 89-91.

Flores, Francisco. 1886-1888. *Historia de la Medicina en México*-Vol. 1: 55. 1886-1888. (On page 258, the divine mushrooms are listed as one of many Aphrodisiacs).

Simeon, Remi. 1885. *Dictionnaire de la Langue Nahuatl*.

Years later, Mexican mycologist Gastón Guzmán (1990:98) briefly mentioned in Wasson and Pau (1962) that "The past six years have seen unprecedented activity in the study of the hallucinogenic mushrooms of México. So diverse and extensive has this activity been, and so numerous are the publications about these mushrooms and their derivatives, that we believe a bibliography on the subject is timely." Guzmán concluded by saying that "the comments accompanied Wasson's bibliography of more than 300 [399 in its second printing] references on hallucinogenic mushrooms, of which about 50 dating from the 16th to the 19th centuries, no more than six were scientific papers from the first half of the 20th century, and 50 were

mycological publications by Heim, Singer and others from 1956 to 1962. Also published since 1956 [at the time of 1962], were ten books and papers by Wasson and his collaborators, and 120 related publications on ethnomycology, anthropology, chemistry, pharmacology, physiology, and psychology."

In September of 1962, Wasson, along with Sylvia Pau, published *The Hallucinogenic Mushrooms and Psilocybin: A Bibliography*. At that time, Wasson listed 376 references. The following year, a second printing appeared with corrections and addenda, which added more listings, bringing a total of 399 references to his bibliography.

Now more than 52 years have passed since the publication of Wasson's bibliography, and today, almost one hundred years since the five above noted books first appeared in print, and over five hundred years since the Spanish early arrival in the New World, more than 3000 articles have appeared in print and the results of those 3000 references will be featured in Vol. X and XI of *Ethnomycological Journals Sacred Mushroom Studies*.

These articles are a significant result of the Wasson's rediscovery of the traditional use of the sacred Mexican mushrooms and describe in detail vast resources of valuable information covering all aspects of modern research involved in the study of the entheogenic fungi of Mexico and their world.

The history of the use of entheogenic fungi lay hidden in the past like artifacts of the great

cultures that used them lay hidden in the thick jungles of the land. The forests have surrendered some of the secrets of the past, and even today, they yield a harvest of the divine mushrooms that give visions to the seer and the sage, the infirm, and the seeker of altered states of consciousness.

The divine mushrooms have been in use by native healers, shamans, and sorcerers for over 3,000 years and though they remained hidden from world view, many infrequent references to their existence remained obscure to the botanists and historians who read of them in the literature and made no effort to record their botanical significance and their proper ethnomyco logical place in history.

Into this scene came Dr. R. Gordon Wasson and his wife, Dr. Valentina P. Wasson, the latter who was born of Russian heritage, and several prominent scientific investigators. They all came to Mexico, and many succeeded in attending an all-night mushroom ritual (the velada) and eventually were able to ingest the sacred plant. The Wasson's related this historic event to the world in an issue of *Life* magazine (13 May 1957) article followed by an article in *This Week* magazine (19 May 1957). Finally, the Wasson's presented their significant research on their discoveries in Mexico in their 2 volume set of books entitled: *Mushrooms, Russia, and History*, published in 1957.

By invitation from the Wasson's, came Roger Heim (pronounced as "em"), a French mycologist. They had traveled far and wide to

the Sierra Mazateca mountain village hamlet of Huautla de Jiménez. It was there in the Mexican state of Oaxaca that their research uncovered the existence of several species of mushrooms, which were new to mycology — fungi that were utilized in magico-religious healing and curing ceremonies among members of the Mazatec and other native peoples of Mesoamerica.

In his laboratory in Paris, Roger Heim soon began to cultivate the newly recognized species *P. mexicana* Heim and second species already known by science, *Psilocybe cubensis* (Earle) Singer; but despite all their efforts, Heim and his colleagues were unable to isolate or confirm precisely what the active principles in the mushrooms were.

After several years of numerous unsuccessful attempts in isolating these mysterious compounds, Heim decided to seek outside help by sending some laboratory specimens of his cultivated mushrooms (*P. mexicana*) to Dr. Albert Hofmann, discoverer of LSD. At that time (1956), Dr. Hofmann was employed at the Sandoz Pharmaceutical Laboratories in Basel, Switzerland.

After two years of many unsuccessful attempts in isolating the active found within the mushrooms, Dr. Hofmann and his co-workers were finally able to isolate two entheogenic ingredients from the fungi. They named these two substances psilocybin and psilocin. The discovery of these two chemical substances soon spurred a flurry of activity by their subsequent use in investigations in both medicine and the field of modern psychiatry

and in providing many graduate students and fellow researchers a new topic of study. At the request of R. Gordon Wasson, Dr. Hofmann soon accompanied the Wasson's and their collaborators on an expedition to the mountain village of Huautla de Jiménez in the Mexican state of Oaxaca. There Dr. Hofmann presented to the curandera, Doña María Sabina, a jar of indocybin (registered trademark), the generic name for the mushroom pills created in his laboratory at Sandoz pharmaceuticals in Basel, Switzerland.

Now that the scientific communities interest in the sacred mushrooms has died down to a slower pace with the primary attention lying in taxonomy, the recreational user has come forward to follow the trail of the curanderos ecstatic and the experiments of the researchers leading to the cultivation and taxonomic particulars of the sacred mushrooms.

During the early 1970s, approximately one dozen species of psilocybian fungi were known of from Mexico amongst a limited group of specialists comprised of mycologists, anthropologists, and botanists, etc., while at the same time, a small following of brave students and academic intellectuals became aware that some species of psilocybian fungi grew abundantly throughout the southeast Gulf States and in the Pacific Northwest of the United States.

There were also a few scholars who suggested that such fungi were also known and used in Colombia, South America (Schultes and Bright, 1979, 1985; Weil, 1972, 1973). Eight years later, thousands of mushroom pickers,

young and old alike, were combing and foraging throughout pasturelands and woodland regions of the Pacific Northwest of the United States. These mushroom hunters were searching for the mushrooms they had learned were growing in their area. The epicenter of the Pacific Northwest mushroom environment occurred along the I-5 Corridor, extending from Bandon, Oregon along I-5 and north to British Columbia, Canada, and west of the Cascade Mountains to the Oregon Coast. Within a short time of a few years, thousands of individuals came searching for the elusive ‘liberty cap’ mushroom *Psilocybe semilanceata* (Fr.) Kuhn., a species common in the Northern hemisphere around the world. And in the Southeastern United States, from South Carolina along the East Coast to Florida and from Florida, extending west to Texas, hundreds of young people sought out the “San Isidro” dung mushroom *Psilocybe cubensis*.

The demand for entheogenic fungi soon became popular among the ever-growing drug subculture, and such demand steadily increased, thereby resulting in the rapid publication of manuals, pamphlets, guides, and books on how to collect, identify, and cultivate entheogenic fungi. As these books continued to flood the market, many soon became instant bestsellers, yet the majority of these books provided misinformation concerning the identification of species common in the United States. Additionally, the publication of identification manuals of species from Canada, Great Britain, Europe, and some third world countries soon followed as did many ephemeral magazines that catered to those in the drug subculture.

Between 1974-1980, information for identifying the mushrooms was rather scarce and unavailable to the general public. During that period, much misinformation about their use and identification had disseminated throughout the published literature. Scholars who collected, studied, and experimented, both scientifically and ludibly, with these fungi, had noticed that the academic research available to them was lacking. Published information about these fungi was also scarce and scattered in the stacks of hundreds of libraries around the world and was not possible to acquire if one was not in a school of higher learning. Papers and books on the cultural use and traditional use of these sacred fungi by indigenous peoples in other regions of Mesoamerica, Central, and South America were indeed lacking. When R. Gordon Wasson published his findings to the public and academic community, not much investigative research was available to the general public.

The secret of the identity of what we today refer to as magic mushrooms first became unraveled by ethnopharmacologist, Richard Evans Schultes, a young research student at Harvard University, who in the mid-1930s traveled to Mexico seeking information about such fungi. Together Schultes, along with his young field assistant Blas Pablo Reko, and a local mestizo, helped in unveiling the long-lost identity of what Schultes at first had assumed were the fungi which the Nahuatl speaking Aztec priests once referred to as ‘teonanácatl’ during the time of the conquest of Nueva

España. Almost two decades later, a middle-aged Wall Street financier and banker with the J. P. Morgan conglomerate, R. Gordon Wasson, who with his friend, photographer Alan Richardson became the first two outsiders who were permitted to witness and participate in a sacred mushroom healing and curing ceremony. The curandera who performed the holy ceremony (a velada) was none other than María Sabina, known amongst the Mazatec Indians of Oaxaca, Mexico as a Sabio ([a] wise one). On that night in July of 1955, that single incident became a turning point opening a doorway into the mysteries of a cultic practice that lay hidden in secrecy from Western Civilization for more than 450 years. An enigma that lay hidden from the world revolved around the ritual use of hallucinogenic fungi, and that secret remained hidden for a long time under an underground veil of secrecy, and today, those mushrooms have become one of the most common intoxicants of the hippie culture.

It is imperative to state that in the right hands, a sacred plant acquires its shamanic properties, but in the wrong hands, it is just a drug. How a secret was maintained undiscovered for so much time inevitably generates lots of questions? The conquistadores tried to destroy and hide all evidence of a mushroom cult in Mesoamerica, but time eventually revealed the lost secret. Today, researchers are aware that mushroom cults were once common in the lands of Mexico. Research on the subject has advanced

further, and the latest discoveries talk about mushroom cults that were held in countries such as Siberia, Greece, Japan and the exotic Islands of Hawaii (although there is no real evidence of such use in Hawaii. The reason being is there are no active species of *Psilocybe* in the Hawaiian Islands). All of the dung-inhabiting species were introduced into the Hawaiian Islands by cattle (*Bos Taurus*) and horses (*Equus caballus*) or perhaps other alien ruminant herbivores. Domesticated cattle were first introduced to Hawaii by the British captain, George Vancouver, in 1793 and 1794, and horses were first introduced to Hawai'i in 1803 aboard a merchant ship under the command of Captain George Vancouver (Tomich, 1986). So it is doubtful that the ancient Hawaiian people used psilocybian fungi in their history, yet author Mark Hoffmann believes otherwise.

Then there came substantial evidence that an *Amanita muscaria* mushroom cult did exist in Southern Ontario, Canada, and Northern Michigan. We can thank ethnomycologist R. Gordon Wasson, who introduced a North American Shaman, Keewaydinoquay, an Indian belonging to an offshoot of the Ojibway tribe in North America when he brought her to San Francisco to speak at the Hallucinogens and Shamanism in Native American Life Conference. There R. Gordon Wasson presented her story of the *Amanita* and her people to the world (Keewaydinoquay, 1978, 1979)-(see Fig. 2). Her tribe is the only North American tribe with a history of the traditional use of a known entheogenic fungus. However, down in Colombia where entheogenic plants are

well-known worldwide because of the multiple ancient native indigenous tribes that still live in the national territory, and for the widespread use of such entheogens as coca, tobacco, brugmansias, and yopo, caapi, yage, and ayahuasca, it is still unknown if those mushrooms were also part of the cultures before the conquest.



Fig. 2 Keewaydinoquay and R. Gordon Wasson. 1978.
Photo: Courtesy of Michael Aldridge.

The latter are but a few of the known psychotropic native vegetative plants used by the indigenous peoples of the land. The variety of entheogens used all around the country is innumerable, and as the scientific and academic community is aware, the Amazonian jungle possesses a vast pharmacopeia of psychotropic plants waiting to be identified and studied. The list of the known species involved is full and long, yet that list continues to grow with new species being determined on a regular weekly-monthly basis.

However, the list is lacking in regards to the suspected use of entheogenic fungi as such applications have been denied by every native Colombian Indian. They do not like to speak of such fungi and usually ignore responding

when asked about such use in their villages. In 1979 Richard Evans Schultes and A. Bright published what is considered to be the first document suggesting the presence of a mushroom cult in Colombia. That article, "Ancient Gold Pectorals from Colombia: Mushroom Effigies?" featured photographs of artifacts that resemble mushrooms. Those artifacts also featured here in this presentation, are on display at the Museo de Oro in Bogotá, Colombia. The goldsmith art from the ancient Colombian native tribes suggests the use of mushrooms. That much is very clear and should be the subject of much interest to anthropologists and mycologists who share an interest in the mushrooms and their history throughout the ages.

Also, a complete study of myths and oral traditions from Colombia provides some evidence of the ancient use of a fungal sacrament. *Huitoto* indigenous tribal legends and myths are a good example. It is possible that the true natives of Colombia do not remember the use of a magic mushroom in their history, but the memory of such past use is preserved in magic fruits and thunderbolt-like staffs present in legends around their cultural heroes. For example, the Muisca tribal groups are the indigenous ancestors of the actual inhabitants of the city of Bogota and its surroundings. The word for mushroom in the language of the Muisca is '*Hua*'. Mariana Escribano, an authority in the style of the Muisca (Escribano, 2000), tells us that the meaning or etymology for the word '*Hua*' translates as a "window to the invisible." Could that epithet '*Hua*' have been used by the Muisca to hide their use of entheogenic fungi from their mycophobic conquerors, the invading 'conquistadors'? While '*Hua*' is the Muiscas word for mushrooms, its meaning as

a “window to the invisible” could imply that it is a key that opens a doorway that leads one through the window of knowledge. Or as in other cultures, could mean that ‘*Hua*’ was like a “window into the soul.” While only the ancient Muiscas knew the secret meaning of ‘*Hua*’, they like the ancient Olmecs, Toltecs, and Aztecs, those of the Nahuatl speaking nations of Mesoamerica and Central America, all chose to hide such use of the sacred fungi from the conquerors who believed that the natives were idolaters who ate the food of the devils.

Remember always that the Spanish were very mycophobic, and they loathed and abhorred with much disgust and hatred, the use of mushrooms by the native population of the New World. Their fear of fungi, especially those species that the natives used as inebriating intoxicants, caused the Spanish historians, botanists, and clergymen to write very negative reports on the effects the mushrooms imbued upon those who consumed them. They described in great detail, horrid accounts of inebriations amongst the Aztec populations that drove those under the influence of the sacred ‘teonanácatl’ fungi, into various states of madness and insanity. Even worse is that the historians also recorded that the Aztecs held intercourse with their Gods while under the influence of the sacred fungi. Thus the Spanish began to tortured, often murderously, those who used the mushrooms and they did so in some of the most grievous manner as they attempted to eradicate such use from the native peoples of the land (de la Serna, 1892, 1953 [1656]; Duran, 1867 [1581]; Motolina, 1858; Sahagún, 1956 [1569], 1950-1969, 1992); Eventually, the descendants of the Aztec Empire, the Nahuatl speaking people of

today had well-hidden their use of the mushrooms for over 450 years after the conquest until the Wasson’s published their discovery of the Mazatec use of the fungi in a 1957 issue of *Life Magazine*; their historical study, *Mushrooms, Russia, and History* by Valentina Pavlovna and R. Gordon Wasson (Wasson and Wasson, 1957); and Heim and Wasson’s *Les Champignons des hallucinogènes du Mexique* (1958).

Now, as the Spanish made their path of destruction into South America, we might assume that the first attacks from the conquistadores against the native populations were attacks of a religious nature, with prohibitions being set up around the use of entheogenic plants? Further research must be conducted around this theme. It is important to note that there are some similarities between the mushroom veladas hosted by María Sabina, and the actual ayahuasca ceremonies celebrated in Colombia. The religious syncretism is a common element present in both practices. There are more questions than answers, and the mystery is increasing each day. One mysterious piece on display in the Museo del Oro in Bogota, Colombia, suggests the presence of Mithraism with cultural similarities between the Old World of ancient Greek and Roman traditions with those of the Tayrona and Muisca cultures (**Fig. 3**). However, further research into this matter is warranted.

And we must take into consideration that the use of the mushroom to find God was something new to Western Civilization. The Mazatec curandera, María Sabina, once informed the Wasson’s that, “before the Wasson’s, no one took mushrooms to find God. Of course, the Mazatec of today do

homage daily to the Virgin Mary and Jesus in their ritual healing and curing ceremonies.



Fig. 3. Tayrona goldsmithing piece suggesting the Tayrona Gods shared cultural and traditional similarities with those of the Gods of Ancient Greece and Rome.

We can be assured by ‘nowam’ that a fungal sacrament was used by ancient Colombians as once suggested by Richard Evans Schultes, today, we must never forget that mushroom cults were dispersed worldwide. It’s essential to study these issues for a better understanding of ourselves in the spiritual clash that is striking the world right now. There is some proof that an indigenous mushroom cult was assuredly transferred from the Indians to the peasants, and they managed to keep the secret and pass it to us. In that manner, we can agree that Eleusis was never lost.

The Past History of the South American Psychoactive Species

Only a few words have been written around the subject of mushrooms and South American indigenous tribes in Colombia, as well as in the rest of South America. Generally speaking, there are a significant number of different tribes, some of whom may have, at

one time in their history, once used entheogenic fungi in a medicinal context.

Colombian authorities from the academy are not willing to give a try to approach this theme and will deny the possible use of mushrooms by the ancient South American Indians by reducing the subject to mere drugs. The descendants of the ancient indigenous tribes do not want to help at all, and they have denied the use of mushrooms by their peoples continuously. Even those shamans, who are knowledgeable in DMT brews and preparations, as well as in Coca leaf preparations, also deny any knowledge of the use of mushrooms in their cultures.

Recent evidence by the late mycologist Gastón Guzmán (Guzmán et al., 2007) suggests that the use of mushrooms by the ancient Colombians in their history needs to be studied more. His mushroomic studies in Colombia are somewhat remarkable as he had identified more than a dozen species of psilocybian fungi from Colombia.

One example is the newly discovered mushroom *Psilocybe bispora*, a species that was first found fruiting in the montane subtropical rain forests and cloud forests in the mountains of Antioquia where *Retrophyllum rospigliosii* (*Syn.=Nageia rospigliosii* (Pilg.) de Laub, 1887), a species of conifer is endemic to the region. At one time the large Evergreens grew throughout much of Colombia and over the past five decades have been the victim of extermination (Farjon, 1998, 2008).

Guzmán described the species of conifer *Nageia rospigliosii* as “pino romerón” [rosemary pine] but that species name was later found to be a synonym of *Retrophyllum rospigliosii* (pino hayuelo). Also it should be noted that the *Pinus* species, *Retrophyllum rospigliosii* is also known locally as the ‘Pino chaquiro’ or the ‘chaquiro pine’). Of course, the species *A. muscaria* and related species of *Amanita* have a mycorrhizal relationship with pine trees. Another species in Colombia is *Podocarpus oleifolius*, known locally as ‘Pino Colombiano’ or the Colombian pine. It was amongst these trees that Gastón Guzmán discovered a new, unreported bluing species of *Psilocybe* in this region (Guzmán *et al.*, 2007).

And in Colombia, many *A. muscaria* and related species of *Amanita* fungi are found where oak trees are common. As for the Pine forest, in ancient times, Colombia was full of these lovely pines. Today there are resisting spots, like the forests in Antioquia visited by Gastón Guzmán, but the number of endemic pines has since alarmingly decreased.

By the year 2007, more than 27 species of psilocybian fungi have been reported in Colombia, of which more than 19 belong to the hallucinogenic genus *Psilocybe* because of the bluing reaction of their basidiomata (Guzmán *et al.*, 2004, 2007). And of course, *A. muscaria* is now also known to occur in Colombia.

It is also good to mention that there are other species of psilocybian fungi in Colombia that

belong to genera other than that of the family *Psilocybe*.

While *Amanita muscaria* is quite common in Colombia, we must note the occurrence of other species of *Amanita* in Colombia that are not active and very toxic (Vasco-Palacios & Franco-Molano, 2012). One such toxic species is *Amanita arocheae* Tulloss, Ovrebo & Halling (1992). This species contains the same deadly amatoxins found in *Amanita phalloides*. *Amanita arocheae* is a mycorrhizal species that associates with oak as a host. It is found in Mexico, Costa Rica, and Colombia. In Colombia, as well as in Mexico and Mesoamerica, it is referred to as the “Latin American Death Cap.”

Another *Amanita* species initially discovered in Colombia is *Amanita bruneolocularis* Tulloss, Ovrebo & Halling. Like *Amanita .muscaria*, *A. arocheae* was also observed fruiting in association with a species of *Quercus* (*Quercus humboldtii*)(González *et al.*, 2009). According to mycologist, R. E. Tulloss, this species is poisonous if eaten uncooked. Moreover, Tulloss had once misidentified *A. arocheae* as *Amanita rubescens* (Pers. ex Fr.) Gray, a choice edible species. One needs to be very careful when hunting for edible or active species of *Amanita*. Furthermore, several years after being described as occurring in Columbia, it was later reported from North Carolina under a single specimen of White Pine (*Pinus strobus*). The authors asked that no one attempt to consume this species as a source of food (Tulloss, Ovrebo & Halling. 1992).

Active Ethneogenic Fungi Known to Occur in Colombia*

**Amanita muscaria* (Heim, 1978; Pulido, 1983; Velásquez *et al.*, 1998). (Ibotenic acid and muscimol).

**A. muscaria* var. *flavivolvata* (Singer) Dav. T. Jenkins.

**A. gemmata* (Fries) Bertillon.

**Copelandia cambodgeniensis* (Ott & Guzmán, 1976).

**C. cyanescens* (Syn.=*Panaeolus cyanescens* (Berk. & Broome) Sacc. (Pulido, 1983; Gerhardt, 1996). (Distribution: PNN, elevation: 1000 m.a.s.l.; Pulido 1164 (COL). References: Franco-Molano *et al.* (2010), Pulido & Boekhout (1989).

Panaeolus papilionaceus (Gerhardt, 1996)-(Not Active). Synonym for *Panaeolus sphinctrinus*. Pollock, 1976; Pulido, 1983)-(Not Active).

**Pn. subalteatus* (Berk. & Broome) Sacc. (Syn.=*Panaeolus cinctulus* (Bolton) Sacc.). Distribution: PNN, elevation: 1000 m.a.s.l.; Pulido 1164 (COL). References: Franco-Molano *et al.* (2010), Pulido & Boekhout (1989).

**Psilocybe angustipleurocystidiata* Guzmán.

**P. antioquiensis* (Guzmán *et al.*, 1994; Guzmán, Allen, & Gartz, 2006; Allen *et al.* 2012) (BCU and XAL, México; and HUA in Colombia)((Antioquia, Municipio Porce, near the road Medellín to Amalfi: Zone Puente Gabino.

**P. bispora* Guzmán, Franco-Mol. & Ram-Guil. Sp. Nov. (Holotype: HUA, Isotype: XAL). (Guzmán *et al.*, 2007).

P. bullacea (Bull.) P. Kumm. (Not Active).

**P. cabiensis* (Guzmán, G., F. Ramírez-Guillén & M. Torres, 2004).

**P. caerulescens* Murr, (Stijve & Meijer, 1993;

Stamets, 1996).

**P. caerulescens* var. *ombrophila* (R. Heim) Guzman (Syn.=*P. mixiensis*).

**P. colombiana* (Guzmán, 1978, 1983; Pulido, 1983).

**P. cubensis* and *P. subcubensis* (Heim, 1978; Guzmán, 1983; Pulido, 1983; Gartz, 1996; Velázquez *et al.*, 1988, 1998). *P. subcubensis* is now recognized as being the same species as *P. cubensis*.

**P. guatapensis* (Guzmán *et al.*, 1994).

**P. heliconiae* (Guzmán *et al.*, 1994) - (Holotype HUA, Isotype XAL).

**P. hoogshagenii* var. *hoogshagenii* (Stamets, 1996).

**P. mexicana* R. Heim (Heim, 1957)-(See: *P. subacutipilea* (Syn.=*P. mexicana*).

**P. pintonii* (Guzmán, 1978, 1983; Pulido, 1983).

**P. plutonia* (Berk. & M.A. Curtis) Sacc.

**P. semiangustipleurocystidiata* (Guzmán, G., F. Ramírez-Guillén & M. Torres, 2004).

**P. subacutipilea* (Guzmán *et al.*, 1994; Guzmán, 1995)-(See, Ramírez-Cruz, Guzmán, & Guzmán - Dávalos, 2013). Same location as *P. antioquiensis*.

**P. subheliconiae* (Guzmán, G., F. Ramírez-Guillén & M. Torres, 2004).

**P. subhoogshagenii*.

**P. wrightii*.

**P. yungensis* (Guzmán, 1983; Ott, 1993; Stamets, 1996).

**P. zapotecorum* (Guzmán, 1983; Pulido, 1983; Stijve & Meijer, 1993; Pulido, 1983; Stamets, 1996).

* Indicates active species in Colombia.

Over time, the number of endemic Colombian psilocybin species increases in number due to the discovery in Colombia of several species once believed to only occur in Mexico. Recent reports have indicated the appearance of *P. zapotecorum* as occurring in Manizales, Colombia.

A recent paper published in Vol. 65(2) of *Sydowia* noted a species initially identified as *Psilocybe subacutipilea* from Colombia, a species that is synonymous with that of *P. mexicana*. Specimens collected in the Colombian Department of Antioquia, Municipio Porce, were harvested near the road from Medellín to Amalfi, at the zone of Puente Gabino on 31 August of 1990. In addition, there had been some reports from Colombia indicating that *P. semilanceata* (**Fig. 4**) was observed in pasturelands near Bogotá. More than likely, that species was probably *P. antioquiensis*, a macroscopically similar species discovered in Antioquia, Columbia (Guzmán et al, 1994). Years later Guzmán identified *P. antioquiensis* in Jalisco, and then in 2003, it was identified from Cambodia by John W. Allen (Guzmán, Allen, and Sihanonth, 2006)-(**Fig. 5**). There is still much research to be conducted in Colombia regarding undiscovered species of psilocybin fungi.

According to ethnomycologists Carl Ruck, and Clark Heinrich, who have studied the history of *A. muscaria*, there are many gold artifacts on display at the Museo de Oro that are mushroom-shaped in design. When consulted by JCRM, they agreed on his theory that some tribes in prehispanic Colombia used

the sacred mushrooms in their past. Some even resembled *P. antioquiensis*. Surely, those designed mushroomic artifacts, as JCRM believed, led these scholars to suggest that mushroom cults had probably existed in prehispanic Colombia. Furthermore, they suggested that the alleged mushroom rituals practice by these cults were not only practiced by the Muiscas, but also by the Tayronas and the Panches, the latter whom we will now refer to as the Tolimas (Ruck, Clark and Staples, 2000).



Fig. 4. *Psilocybe semilanceata*. Photo: Courtesy of KharkKorven.

In describing some of the many gold artifacts on display at the Museo del Oro, JCRM observed the Tolima mushroomic designed pieces were representative of the most

powerful, yet least stylized of all those of a similar nature in comparison to those of other tribes. The same, artifacts created by the Tayronas revealed theirs to be the most artistically designed pieces on display.

It should be noted that there are some pieces of goldsmithing works by the Quimbaya, that are known as a poporo, or as a ‘mushroomic’ poporo. The Quimbaya people made poporos to be used in ritual ceremonies in containers for lime during coca ceremonies with Datura or tobacco that appeared, in the shape of a dreaming woman, however, the poporo in **Fig. 6** resembles a fungus, precisely that of *Psilocybe antioquiensis* (**Figs. 7-8**).

The Quimbayas, probably a past cultic user of the sacred mushrooms, is a subject best left for others to study (see, SOMA AND THE QUIMBAYAS, by the senior author).

<https://somyaylosquimbayas.wordpress.com/2018/03/07/soma-y-los-quimbayas>.

The Isthmo-Colombian Area is known as a cultural area that encompasses those territories occupied predominantly by speakers of the Chibchan languages during the time of the conquest of Nueva España. Moreover, the spoken language was indigenous to the Isthmo-Colombian area that extended from eastern Honduras to northern Colombia. It also included some populations of Nicaragua, Costa Rica, and Panama. Most interesting is that it is also the language spoken by the Tayronas and the Muiscas. Furthermore, the language most likely

originated in the region along the Costa Rican-Panamanian border.

However, the language spoken by the Tolimas belongs to the Cariban languages, and it is possible that some cultic practices by the Chibchan people eventually led them to establish their presence and practices in the south of Colombia.



Fig. 5. *Psilocybe antioquiensis*. Photo: John W. Allen.

It is more than likely that word of mouth regarding the sacred mushrooms use had spread from Mesoamerica into various regions

of Colombia due to the conquest of Nueva España, thus bringing such knowledge of the use of the sacred mushroom cults to Colombia from the North. There are some who believe that such use in Colombia could have come via the ancient tribes of Peru and may have once occurred amongst the Moches or Mochica tribal groups of Peru prior to the conquest. Peter Trutmann (2012) wrote that more than likely the indigenous peoples probably had immigrated from the North [and flourished during the 1st to the 8th century Ce along the northern coast of what eventually became Peru].



Fig. 6. Quimbaya piece described as a mushroomic poporo. A tool used to keep the lime used in then powdered coca leaf's chewing process.

In his thesis on the Mochicas Trutmann suggested that, "It is highly [possible] that ancient Peruvians brought the knowledge of mushrooms with them as they migrated from the northern hemisphere, including the knowledge of edible, medicinal and sacred mushrooms. In this preliminary search evidence was found that as early as 1200 BCE they were important enough to be represented in the ceremonial and ritual art of the Cupisnique culture (1200-200 BCE), [as well as in] the [pre-Colombian] Pukará cultures (1200 BCE -400 CE). Earlier petrographic representations have not been studied, [and] evidence of mushroom use may be found in caves."

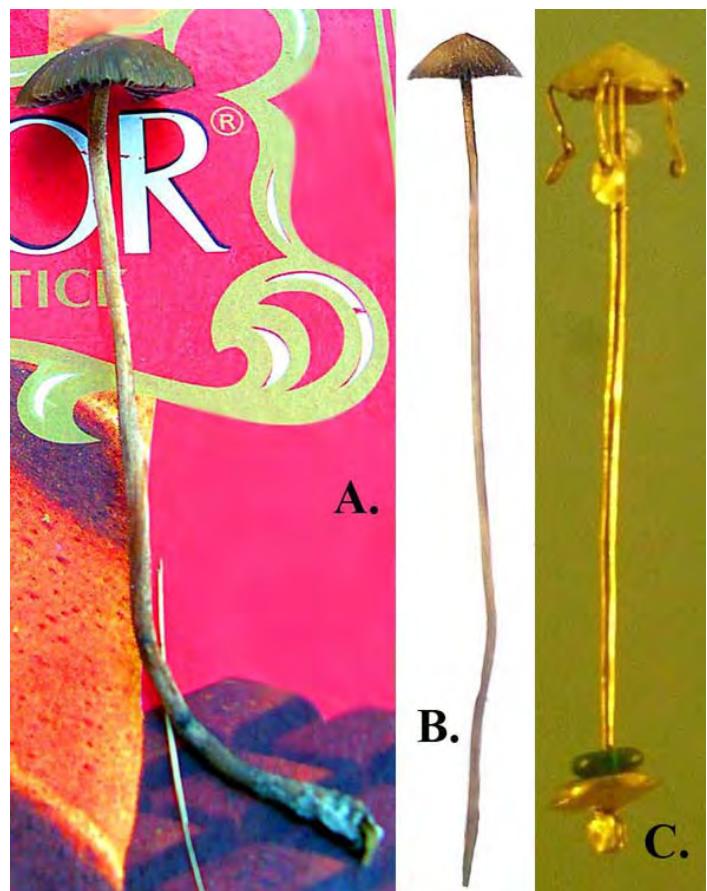


Fig. 7-8. A and B: *Psilocybe antioquiensis*; C: Quimbaya Mushroom Poporo. See the similarities.

The earliest Peruvian mushroom representations occurred in the same timeline as the first Mesoamerican mushroom images of the Olmec 1000 BC (Borhegyi, 2010). “One can also trace mushroom use through a continuous dateline of cultures from 3000-2200 years ago to at least 1532 and geographically from the north to the south of the country through the Cupisnique, Pukará, Paracas, Moche, Wari, Chimú through to and finally the Inca cultures. With the destruction of [the] Inca and [other] indigenous societies after [the] European contact, particularly their religion, representations of [the] mushrooms by the indigenous peoples virtually disappeared.”

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THE MAN-BATS

Studying the mysterious gold mushroomic-like artifacts at the Museo del Oro, the fungal

enthusiast will instantly be amazed that some of their features bare a strong resemblance to mushrooms. Having traced the possibility that there were at one time in the history of Colombia, certain mushroom cults that employed entheogenic fungi in ritual ceremonies performed by the indigenous Muiscas, the Tayronas, and the Tolima tribal groups of Bogotá.



Fig. 9. Tayrona Man-Bat Styled Pendant.

Most surprising of the goldsmithing pieces found in the Museo del Oro is the recurrent motifs found in the artifacts that are related to the Man-Bat.

The most renowned of the Man-Bat pieces in the Museo del Oro are those attributed to the Tayrona (Fig. 9), whose pieces bare the designs of stylized mushrooms held over the heads of the shamans giving praise to their fetish. In some of these Tayrona pieces, a Shaman appears to be carrying some type of mushroom that is held in his hands (Fig. 10). Earlier Tayrona mushroom representations show a golden hat worn by a Tayrona Man-Bat shaman that is similar in appearance to that of a mushroom. There seems to be little

published evidence indicating the actual use of such fungi by the Muiscas, the Tayronas, and the Tolima tribal groups, and that includes another primitive tribal group, the Koguis, also suspected of belonging to a mushroom cult in prehispanic Colombia. The Koguis are one of the most well-known of the Colombian indigenous tribes who also happen to descendants of the Tayronas. They, like the modern-day indigenous peoples of the land, also deny any knowledge whatsoever of any use of the inebriating mushrooms by their people.



Fig. 10. Tayrona Man-Bat Styled Pendant.

Some Muisca Man-Bat artifacts present bare heads, portraying a pileus-like mushroom motif shaped head. A head that appears to resembled an unidentifiable species of what may have been a species of entheogenic fungus. All of the Muisca Man-Bat artifacts possess what appear to be mushroom caps on their heads. Jose Rozo Gauta (1998), an authority on the Muisca culture, once suggested that the Muisca Man-Bat artifacts were proof that the Muisca shaman possessed a vast cornucopia of knowledge regarding the

widespread use of entheogenic plants in their world. Nevertheless, Gauta also failed to mention in his works just what entheogenic plants or fungi that the Muisca shaman who created the Man-Bat artifacts may have used in their ceremonies.

Since the cultic use of mushrooms in ritual ceremonies by the Muiscas is lacking and very rare, there is a plethora of archaeological evidence to suggest that the Muisca shamans did use a wide variety of entheogens in their history. The principle entheogenic plant used by the Muisca belonged to the genus *Brugmansia* (**Fig. 11**), a genus comprised of seven species of flowering plants in the family *Solanaceae* (*Brugmansia suaveolens* (Humb. & Bonpl.) Bercht. & J. Presl.).



Fig. 11. *Brugmansia suaveolens*. Photo: Courtesy of John W. Allen.

From an artistic viewpoint, the mushroomic representations on display at the Museo del Oro could infer that one of the entheogens in question used by the Muiscas was fungal, most likely a species of *Psilocybe*. However, the mushroomic caps on the Man-Bat artifacts (**Fig. 12-13**) appear to be of the psilocybian type.



Fig. 12. Tayrona Man-Bat Styled Pendant.

On the other hand, one cannot discard the possibility that the ancient Muiscas may have known of the inebriating properties of *A. muscaria*, a species that would be very recognizable due to the brilliant red cap with white warty spots on it. Furthermore, some of the Golden Man-Bat artifacts do resemble an *Amanita* species (**Fig. 14**).



Fig. 13. Tayrona Man-Bat Mushroom Hat.

Jose Rozo Gauta (2012) wrote that the Muisca Man-Bats were chthonic beings, deities that lived in caves and moved about in the dark of the night.

It is possible that Muisca priesthood initiates may have been trained at night and were prohibited from looking or gazing upon any light.

They were also known to have no interactions with women during their initiation. Those priests who were initiates were known as ‘Chyquys.’ The Chyquys would live in caves for years and were night beings until their long-termed initiations were completed. Similarly, the Mamos (the actual Kogui priests who were descendants of the ancient Tayronas) also shared similarities in their preparations before they could attain the title of the Chyquys. The Chyquys also were forbidden to gaze upon light and not have interactions with women for many years.

Gerardo Reichel-Dolmatoff, a renowned Colombian anthropologist, often considered to be the godfather of Colombian anthropology wrote in his book, “*Goldwork and Shamanism (2006)*,” wrote that the use of magic mushrooms by the Kogui priesthood occurred during their initiation ceremony to become a Chyquy.



Fig. 14. Muisca Man-Bat Piece-Photo: Museo del Oro, Colombia.

Further south is the Panches people, also known as the Tolimas. Their language was unclassified, reportedly mentioned as being unclassifiable. However, it could have been of the Cariban language. At the time of the Conquest, the Panche inhabited the southwestern regions of Cundinamarca State and the Northeastern region of the State of Tolima near the Rio Magdalena. At that time in history, their land became known as the New Kingdom of Granada, and over 30,000 Panches occupied that area. Scholar Fray Pedro Simón (1882-1892 [1626]) is known as one of the most important of the Muisca Scholars. It was Simón who wrote that the word panche in their Panche language

meant ‘cruel’ or ‘murderer.’ Furthermore, the Panche were mortal enemies of the Muisca people in both the State of Cundinamarca and the State of Tolima.

The artistic representations of the possible use of the sacred fungi from this part of Colombia belong to those of the Tolima Tribes, especially those Man-Bat artifacts where if one turns the head of the Tolima Man-Bat artifacts upside down, then the Tolima Man-Bats heads resemble a mushroom in its entire splendor.



Fig. 15. *Amanita muscaria*. Ville de Leyva.

Moreover, strangely, it appears that the Northern crafted Man-Bat shaman starts to turn into a Jaguar from the southern regions of Colombia while still retaining their bat properties of the northern Man-Bat artifacts. Furthermore, of course, they still seem to retain their Man-Bat properties since these are surely creatures of the supernatural worlds of the shaman. Also of great importance is a rumor regarding the Cofán Indians of Southern Colombia. They still inhabit parts of Southern Colombia between the Rio Guamués (a tributary of the Rio Putumayo) and the Rio Aguanicó (a tributary of the Rio Napo). At times, some shaman transformed their selves into jaguars after ingesting the sacred fungi. More research concerning such a rumor needs to be further investigated.



Fig. 16. Muisca Man-Bats.

It is important to note that the first suggestions made by researchers who have studied the Tolima pieces were the idea that they represented a penis, but the Tolima mushroom head leaves no doubt that it is indeed a mushroom and not a penis. Maybe it is both a mushroom and a penis. Why not? Perhaps such pieces are representative of a past mushroomic-phallic-fertility cult (see Allen, 2015)?

Sometimes a hypothesis has a way of turning itself into becoming a theory, and one theory is that a mushroom cult that was common centuries ago eventually was carried away by the Tayrona Man-Bat Shaman into a world of secrecy throughout all of Colombia. It is a daring supposition to assume that an ancient mushroomic cult may have been diffused by the Tayronas, who probably

spread their influence into other regions of Colombian territory, but it makes sense when you see that the Muiscas and Tayronas spoke languages that belonged to the same Chibchan languages family.



Fig. 17. Tolima Man-Bats.

It is not considered as crazy to assume that the Man-Bat shaman had arrived in the south of Colombia and shared this ancient knowledge of the sacred mushrooms with the Muiscas and the Panches and then centuries later began to hide their use and knowledge of the sacred fungi from the invading conquerors of the land. Since the Muiscas and the Panches were at war with one another most of the time after the arrival of the Man-Bats, maybe the constant violence caused the Man-Bat shaman to hide their magic from their neighbors, or maybe they became an anarchistic mushroom cult; formed as a secret society disguised as a 'Priesthood of the Tayrona Hierarchy.'



Fig. 18. A Tolima Mushroom Head.

The Fleur de lis



Fig. 19. A fleur-de-lis.

The *fleur-de-lis* is a stylized "lily" (in French, *fleur* means "flower," and *lis* means "lily") that is used as a decorative design or motif. Many Catholic saints in France, particularly St. Joseph, are depicted with a lily (Fig. 19). Since France is historically recognized as a Catholic nation, the *fleur-de-lis* became at one and the same time, a symbol of religion and politics, and later as a dynastic, artistic, and emblematic decorative design that was symbolic for those of French heraldry; especially as "Coat of Arms" for many Nations In Europe as well as in Asia and around the world... Furthermore, some nations say it also represented an Iris (Wikipedia).

A remarkable Tayrona goldsmithing piece on display at the Museo del Oro (Fig. 20) resembles a Fleur de lis, a common design found in jewelry with a history dating back to the 1st-century a.d. The goldsmithing and craftsmanship emblem and repetitive artistic detailed Tayrona gold piece on display at the Museo del Oro is representative of the Fleur de lis, a common artistic representation often depicted worldwide in other cultures was also present in used by the Tayronas



Fig. 20. Villa de Leyva Boyacá, Colombia. This is where Dona G lives.

Carl de Borhegyi, an authority on the mushroom stones of Mesoamerica wrote about this piece (Borhegyi, 2012). Seen below is a mushroom artifact from Guatemala that pictures a *Fleur-de-lis*, a stylized mushroom, and a history of the beginnings of the Mayan people (Fig. 21). Is this indicative that a Man-Bat cult practiced by the Tayronas may have had their origins in

Mesoamerica? The presence of the bat in myths and legends all over America is a work left undone that will add new insights to future research.

In today's modern Colombian State of Tolima, at an ancient dwelling place of the Panches or Tolimas, it has been reported that there are instances of witchcraft being practiced throughout the year. A very trusty informant of JCRM. spoke of a sorcerer from Tolima who performed for him, a kind of witchcraft ceremony using an unquantified amount of mushrooms suspected as belonging to the genus *Psilocybe*.



Fig. 21. Fleur de lis is present in this Mayan representation of their beginnings. From Guatemala. Photo: Courtesy of Carl de Borhegyi.

However, those mushrooms were not the same species as *Psilocybe cubensis*, and JCRM stated positively that the mushrooms were different than those growing in the manure of cattle. As noted previously Guzmán, Allen, and Gartz (2000); Guzmán *et al.* (2004, 2007); had identified many species from Colombia, including species previously known from México, the Caribbean and other countries in South America.

This again brings up the subject of a species that Richard Evans Schultes described as a 'tree' fungus, suggesting it may have been *Psilocybe yungensis*, a species known to occur in Colombia. Schultes reported that a potion made by an indigenous tribal group in Peru

was used in ritual ceremonies described as a 'tree' fungus. However, it is possible that the species in question could have been a member of the Genus *Gymnopilus*, possibly *Gymnopilus junonius* (Syn.=*Gymnopilus spectabilis*). Throughout history, *G. junonius* was reported in the academic and medical literature as a somewhat mild, yet toxic species. Those who consumed it as a source of food became afflicted, experiencing extreme disturbing visuals, causing them to immediately seek medical attention for their unusual malady. Of course, in most situations, once the initial onslaught of the effects of the mushrooms had subsided, those under the influence realized they were not in danger from the

ingestion of those fungi and were later discharged and allowed to return to their homes. One lady from Ohio who allegedly claimed to have eaten only a few nibbles of this species stated, “that if this is the way one were to die from mushroom poisoning” then she was all for it (Walters, 1965).

Accidental inebriations in Japan by *G. spectabilis* have been well documented by Sanford (1972), and then by Wasson (1973) as being the fungi that cause hallucinations when accidentally consumed as a source of food. The Japanese had epithets for this species that included such names as, *Waraitake* (laughing mushroom), and later as *ō-waraitake* (big laughing mushroom) (Kawamura, 1918; Sanford, 1972), . In the United States, it too is a species used ludibly by some who refer to it as “Big Laughing Gyms.” Accounts of accidental ingestions since the late 1800s of this species occurred due to the fact that *Gymnopilus junonius* resembles the much sought after edible species, *Armillaria mellea*, known to mushroom lovers as, the “honey” mushroom. Both the edible ‘honey’ mushroom species and the psilocybian species grow on the stumps of dead trees (Fig. 23).

Interestingly, the psilocybian species in the Genus *Gymnopilus* also possess other psychoactive compounds known as Stryrlpyrones (bis-noryangonin and hispidin). Bis-noryangonin, is also found in the Pacific drug root Kava (*Piper methysticum*). They were found in *G. spectabilis* and *G. decurrens* (Hatfield 1971, 1977-1979; Hatfield and Brady, 1969, 1975; Hatfield, Valdez and Smith, 1977, 1978). It seems to be a good alternative to a *Psilocybe* species or an *Amanita* species as the ‘tree’ fungus species reported by Schultes and Bright as occurring in Peru (1979). More research is needed in regards to *G. junonius* and other related active species that may be in Colombia (Fig. 24-25).

It seems clear that ancient mushroom cults were dispersed throughout all of the Colombian territories. It is evident that the ancient Tolima shamans did inherit and then bequeathed their medicinal plants and mushroom knowledge to those peasants in Tolima who practiced medicinal witchcraft. In recent years, many new anthropologic studies have been undertaken in Colombia regarding the practice of witchcraft in Tolima.



Fig. 22. Stairway to Heaven. Photo Montage. Fang, Northern Thailand. Courtesy of John W. Allen.



Fig. 23. Top image: *Gymnopilus spectabilis* (Syn.=*Gymnopilus junonius*) Lower Image: Look-a-like edible species, *Armillaria mellea* (the honey mushroom): Photos: Courtesy of Joshua Hutchins.



Fig. 24. *Gymnopilus junonius*. Close-up of above top image. Observe the blue-green stain on damaged stipe.
Photo: Courtesy of Joshua Hutchins.



Fig. 25. Active species of *Gymnopilus*. (A): *Gymnopilus aeruginosa* (Caleb Brown); (B): *Gymnopilus aeruginosa* (Richard Kneal); (C): *Gymnopilus subpurpuratus* (Alan Rockefeller); and (D): *Gymnopilus viridans* (Caleb Brown).

The above species of *Gymnopilus* may or may not occur in Colombia. However, *Gymnopilus* is a family of mushrooms that loves dead tree stumps and usually they grow in clusters. And as noted earlier, this genera could have been one of the mushrooms Schultes mentioned as a tree fungus

The Sabia of Villa de Leyva

Bogotá, Columbia has a reputation amongst members of the drug subculture as a tourist destination known for being friendly to those who come in search of the sacred fungi. In the past, many travelers, backpackers, hippies, students, teachers, and other men of learning have come to Bogotá in their search for the sacred fungi (Weil, 1972, 1973). Sometimes there are many problems associated with those who come in search of the mushrooms in regards to their illegal status. So, as in Mexico, one must whisper to local inhabitants when it comes to the matter of obtaining the sacred fungi of Colombia, and a danger for those who share the mushrooms with the tourists if they are apprehended for providing mushrooms to tourists for a shamanic type of set and setting.

Since the mid-1960s, Bogotá, through word of mouth, had become a final destination for those seeking the sacred fungi.

Among the more notable patrons of the mushrooms who first came to Bogotá in search of the magic fungi was a young Harvard student named Andrew Weil (Weil, 1972, Weil, 1973, 1975-1976), Weil was the first Westerner after Schultes who came to the Colombian Amazon, in search of the mushrooms, After Weil came Wade Davis and Timothy Plowman. Both students of Schultes and Mark Plotkin.

Many more hippies in the 1960s and 1970s who read of Weil's mushroomic adventures in

the local Newspapers of the Northeast U.S.A, soon followed, and years later, the brothers, Dennis and Terence McKenna (McKenna, 1984, 1992, 2012), who wrote of their journeys as well soon followed suit. Because of their popularity (the availability of the magic fungi), and the writings and lectures across America and Europe by those intrepid magic fungi entrepreneurs, they were the ones who made Bogotá famous as a peaceful city that welcomed tourists with an open heart. However, as it was in Mexico (Wasson, 1957; Ott, 1975), Bogotá soon became overrun with hippie types seeking to experience the magic and power of the sacred fungi, and eventually, many caused problems that attracted the attention of the local authorities.

Often Americans and Europeans tend to vacation in countries where they sometimes seek out specific plants such as ayahuasca [huasca], caapi, yage, yopo, or the magic mushrooms. Those tourists seek to visit countries where they may find and experience such plants, which are generally illegal in the countries of their origins. In the 1960s due to the writings of R. Gordon Wasson and others (Wasson, 1957; Leary, 1968, 1983, Ott, 1975; 1993; Unsigned, 1970), thousands of young adults and many renown celebrities, authors, doctors, etc., all began pilgrimages to Mexico seeking to obtain these sacred fungi in order to participate in an authentic ritualistic ceremonial settings, while many of those long-haired hippie types also sought to experience

them in a ludible manner, yet hoping to see or communicate with God. Eventually, thousands of those intrepid travelers soon were expelled from Mexico and sent home with haircuts provided freely by the Federales at the border. Those haircuts and eventual deportation came about due to the many problems they caused with the local residents whose villages they had invaded (Ott, 1975; Unsigned, 1970).

Over the years, many of those early intrepid explorers who traveled long distances hoping to unravel their confused minds by experiencing the power and magic of the sacred fungi in Mexico, were deported and returned to their perspective countries, they did manage to carry through word of mouth to the masses of America, Europe and Australasia, news of the availability of the mushrooms that occurred in Oaxaca, Mexico. And to other countries nearby.

That eventually led many local mestizo's (phony local peasants who were pretend shamans and/or curanderas, etc.) who catered to tourist influence, with an opportunity to sell magic mushrooms to the tourists and sometimes an alleged authentic mushroom ceremony for a price (those were not real authentic mushroom healing and curing ceremonies that were performed by local mestizos who passed them off as a shamanic practice). Today, the problems that plagued the indigenous peoples in Oaxaca, Mexico have now spread into the other Mexican States like Jalisco and also in several

countries in Central and South America.

Even today, over 45 years have passed since Andrew Weil first consumed specimens of *P. cubensis* in Colombia (Weil, 1973), and today tourists still flock to Bogotá in search of the magic mushrooms and in hopes that they too might experience a sacred ceremony. Moreover, many of those tourists, as in Mexico, often seek out local mestizos who are willing to provide them their services for a price. Sadly, the mushrooms are vilified by many citizens of Bogotá and those who carry out such ceremonies. Furthermore, of course, not all those who seek the mushrooms are peaceful as many still cause problems so bad that the authorities can be very mean to tourists who get caught using or possessing magic mushrooms. Colombian prisons are no place to spend a vacation for those foreigners who break the laws of the land.

Outside of the city of Bogotá, Columbia, about a 2-3 hour drive by car or bus, respectively, there is a touristic colonial town and municipality in the Ricaurte part of the Villa de Leyva founded in 1572. That city is Villa de Santa María de Leyva, located in the Colombian State of Boyacá. Moreover, Villa de Leyva is recognized by local peasants and tourists as being a part of what became known as the Bogotá underground, a place to go where one may find and experience the magic of the mushrooms.

More than 40 years or more have passed since the young backpackers and tourists first came to Villa de Leyva in search of the magic

mushrooms. Furthermore, amongst the local peasantry, there are still those peasants who are more than willing to assist the foreign travelers who seek out the species *P. cubensis*. Over the years, rumors had spread across the land about the availability of the mushrooms in the municipality of Villa de Leyva and soon with the passing of time, more and more people began to arrive at Villa de Leyva, always seeking out anyone who would assist them in their search for the magic mushrooms. Eventually, Villa de Leyva became a well-known place around the world for its magic mushrooms and a possible chance to experience an authentic mushroom ceremony. Unfortunately for most, a real ceremony is not possible.

There is a well-known lady who resides in a tiny village hamlet near the surroundings of Villa de Leyva. To find her, one must leave the colonial town for what will be a mere two hours walk near the Periquera Falls. It is in that area where Doña G lives ('Una bruja en Colombia que también es muy Sabia'). Doña G is an elderly lady who is always willing to share her time with the backpackers, campers, and travelers who seek guidance from someone with knowledge when it comes to the matters of the mushrooms in her world.

In some ways tourists believe that Doña G is like María Sabina, but in reality Doña G is just another local mestizo who is kind to the foreign tourists and it is very sad that the young foreigners look upon her as a holy woman or a shaman or medicine woman.

But then again she is nothing like the average mestizo who is out to do whatever it takes to earn some extra income from tourists who wish to consume some magic mushrooms.

Over the years, JCRM became a very close friend of Doña G, and she had shared with him some of her secrets about the sacred mushrooms. One day she confessed, assuring JCRM that she had never consumed the mushrooms, but that Doña G loved gathering them and in doing so told JCRM that she had fallen in love with the mushrooms, and Doña G confessed that she believed that she was providing an excellent service to those who came to her. She also told how she, over time, had mastered the techniques of mushroom drying better than any college student or academic mycologist. Her drying technique was nothing more than leaving the mushrooms on the roof of her home in baskets, yet in her heart, she believed that she had become a master in drying the mushrooms, and she felt that she had developed a unique talent for preserving the mushrooms for later use. JCRM is convinced that Doña G is a Holy woman.

In México, some mestizos, as well as foreign tourists living in some regions of Southern Mexico often store *P. mexicana*, *P. cubensis*, and *P. caeruleascens* in honey. This practice was taught to mestizo shaman by long-haired hippies who brought such a method to the local people in many areas of Mexico when they came in search of the mushrooms in the early 1960s and through the next five decades.

However, mushroom enthusiasts from Colombia may have visited Mexico in search of the sacred mushrooms and then learned of the practice of storing mushrooms in honey and after returning to Colombia, shared their knowledge with local shaman regarding the storing of fungi in honey. Still, this is not a suitable method as drying is the preferred method for the storage of such fungi. Another method used was to freeze the mushroom, which is also a wrong way to store the sacred children for future voyages. The idea of storing the mushrooms by preserving them in honey originated from the writings of Diego Duran in the 16th century. Diego reported that the mushrooms were served with honey or chocolate to visiting dignitaries during the coronation of Moctezuma (Duran, 1581). Ethnopharmacologist Jonathan Ott in *Pharmacotheon* wrote that,

“Freezing fresh mushrooms is perhaps the best way not to preserve their activity, besides complicating storage. There is only one reason a pharmacopolist might freeze mushrooms to render them an amorphous mess so the prospective sucker would not realize what they are—garden variety mushrooms with unknown adulterants. The same goes for curing mushrooms in honey. Chopping or shredding dried mushrooms will likewise accelerate the oxidative degradation of the active principles.

While on of the sixteenth century accounts of teonanácatl states that the mushrooms, por ser amargos, “being bitter,” were taken with honey, there is no tradition of preserving the mushrooms in honey in Mexico. Indeed, embalming in honey is useless for

*preservation of mushrooms. Nevertheless, during a 1976 field trip in the Zapotec Zone of Oaxaca, I was surprised to be offered *Psilocybe caerulescens* for sale by a Zapotec Indian family...embalmed in honey! Predictably, this was a “disgusting fermenting mess, crawling with bugs” (Ott, 1976, [1979]). It is most unlikely any psilocybine had survived the fermentation, but the resulting metheglin may have possessed a modest amount of ethanol! What a tragic waste... fermenting the *Pharmacotheon* into mead... like transmuting gold to lead! On the other hand, in the Poetic Eddas of Norse mythology, we hear of Odin’s Othrörir, the magic mead which imparted immortality, wisdom and poetry, and of Mimir’s well at the base of the world tree Yggdasil, from which flowed a magic mead of wisdom... but this was the Sierra Zapoteca, not Scandinavia! I was told that the Zapotec Indian family had learned this honey-embalming practice from the mushroomic tourists, and prepared the mushrooms so to satisfy the tastes of the foreigners! This is an example of how quickly tradition can be corrupted by the sudden exposure of isolated pockets of traditional culture to foreign influences (Ott, 1978, 1993).”*

In one conversation between JCRM and Doña G, JCRM had brought a fresh specimen of *Amanita muscaria* to her home and after seeing it for the first time ever; Doña G looked directly into JCRM's eyes and spoke with much authority, “Esa es mas brava,” literally implying; “that is more ferocious” than the mushrooms she gathered from manure in the fields near her home (according to JCRM, Doña G was referring to *P. cubensis*).

With the passage of time, rumors had spread throughout the region that the use of

psilocybine cow mushrooms in Villa de Leyva and its surroundings was no longer a secret and in recent years there has been an increase in tourists who still flock to the area with an interest in obtaining some magic mushrooms and even today (2019), the mushroom tourism population in Villa de Leyva has grown now more than ever).

In Colombia, the possession and trafficking in psilocybine mushrooms are punishable by law, yet the local peasants (mestizos) still provide mushrooms to the foreign travelers who are willing to pay an excellent price for the precious mushrooms. Because of Doña G's respect and love for the mushrooms, many tourists consider Doña G as being different from the local mestizos who peddle mushrooms to the tourists. Nevertheless, because of her love for the mushrooms, some local inhabitants, as well as some of the young scholarly students of anthropology who come to Villa de Leyva, believe that Doña G is a living testimony of the Muisca myths.

JCRM informs us that each time that he plans a visit to Doña G's home, he always stops along the trail and proceeds to harvest some fresh specimens of *P. cubensis* which he will willingly share with Doña G, saying that "when I find mushrooms on the way to her home, I pick out the best specimens that I have found and I present them to her as a gift and her appreciation of my gift to her of the special children is evident in the windows of her eyes. She tends to light up like a Christmas tree bulb, and she always celebrates the

moment with a smile; gleefully telling me that she has many friends who love the mushrooms as she does and after she dries them out she will share one with a friend as a gift of the heart."

Doña G is a perfect informant when it comes to obtaining information from her about the tourists who come seeking the mushrooms, and she has always shared with JCRM her words except when her sons and grandchildren are near. When children enter the room seeking attention away from that of the stranger who often visits her, she will instantly fall into deep silence and will divert the attention of the conversation to any subject of interest to the grandchildren that has nothing to do with the mushrooms.

Indeed there are many peasants familiar and friendly towards the tourists and backpackers who come to Villa de Leyva, who know of the mushrooms. Those local peasants are always willing to help foreign travelers in their quests. However, many peasants are also very cautious about whom they speak to about such fungi and are very careful as to just how far they will go in aiding the tourists in their quests for the mushrooms.

Guzmán in (Guzmán et al., 1994), wrote that: "*P. cubensis* and *P. subcubensis* are used as recreation by young people at the Medellin region, where they are known as "hongo rey."

Before Dr. Guzmán passed away in January of 2016, in a personal communication to J.W.A.,

Guzmán (2015), informed JWA. that *P. subcubensis* was the same species as *P. cubensis*.

Furthermore, there also seems to be a smidge of paranoia among the local mestizos about who may be listening to their conversations with the tourists in regards to the mushrooms. Moreover, while those locals wish to please the travelers, they also have to be very careful because there are those who do not like the mushroom business in their town and on

some occasions, there are those locals who will alert the authorities that a stranger in the town is inquiring of local citizens as to where they might find some mushrooms. So both the local peasants as well as the tourists both have to show each other that they respect one another in the matter of the mushrooms because if the tourists behave and are peaceful, there is no reason to be wary of the local police bothering anyone.



Fig. 26. *Psilocybe cubensis*. Ville de Leyva.

Over the years, mushroom enthusiasts chose to come to Villa de Leyva to enjoy the beautiful countryside away from the sizeable populated city of Bogotá, and hopefully, they came to realize

his was a place where they would be able to experience the wonder of the magic mushrooms in safety.

Western Expansion

As in Mexico in the 1970s (Unsigned, 1973), some of the foreign travelers began to create problems for the local residences of the city. They carried with them their backpacks and tents, which they would pitch in the countryside near Villa de Leyva. Moreover, in the sanctity of their tents, they would commence to consume the sacred children and began a journey into the very fibers of their souls. Furthermore, many of these backpacking tourists took with them on these extraordinary voyages, the spirits of the mushrooms as their guides.

During these sojourns, on occasion, some of those backpackers would cause problems by displaying lousy behavior towards the residents of the region. As noted above, after the Wasson's had announced to the world their discovery of what they had described as a mushroomic cult hidden deep in the montane regions of the Sierra Mazateca range in Mexico, a cult that used certain mushrooms in ritual-like ceremonies that had survived the Conquest for over 400 years. Soon word of mouth about the mushroom's existence began to spread across the United States, and by the summer of 1960, thousands of young long-haired hippie's beatniks, poets, rock stars, literary scholars, and others of a celebrity status began pilgrimages to Mexico in search of those mushrooms, and there were also

many seekers who created problems for the local peasants in many village settings throughout Mexico, Guatemala, and other locations in Central America. Eventually, thousands were deported back to the United States, and many were sent back to Europe and Australia (Wasson, 1957, Unsigned, 1970, 1976; Ott, 1975; Guzmán. 2003; Baverstock, 2015).

By the 1970s, while the Federales in Mexico were still deporting young long-haired hippies for bringing madness to many small village hamlets in the mountains of Oaxaca, a similar problem was occurring in America. Young adults in the southern states of America were also causing destruction and damage in pasturelands by damaging fields while foraging for *P. cubensis*, unaware that the genus *Copelandia* was also common in the Southern States of America. On the West Coast of America in Oregon, Washington, and British Columbia, young adults sought out *P. semilanceata* (the liberty cap), a species known in the PNW (Pacific Northwest United States), Canada, the UK, and much of Europe, the Baltics, Russia, China and even in Chile.. The 'liberty cap' species is a cold-weather species that is common in the northern hemisphere that grows in manured soil but never directly in dung. It also appears in lawns, meadows of wild grasses, golf courses, and sometimes appears in fresh sod.

Between 1972-1982, local police in Oregon and Washington States, as well in Vancouver, British Columbia, Canada began to issue trespassing tickets to the young adults who were trespassing on private farm properties in their search for the magic mushrooms. These kids also caused problems while foraging in private fields in the PNW. They would often leave gates open in pastures, fields, and meadows where cattle and sheep graze. Moreover, at times, cattle would end up on public roadways and highway, causing traffic jams as farmers rushed to round up their stock and corral them back onto their properties.

Other problems caused by mushroom hunters was that they would often trash fields by leaving beer bottles, beer cans, soda pop containers, food and candy wrappers, and garbage in the pastures. Besides, some pickers would become angry when the farmers would ask them to get off of their properties. Some even brought their dogs into the fields with them, and the dogs would often chase the cattle. Those actions by trespassers also caused problems for the farmers, especially with their dairy cattle. The annual mushroom picking became so bad in the USA that on any given weekend in the fall months of mushroom picking in the PNW, hundreds of tickets were issued weekly to shroomers for trespassing, which is illegal. During those fall months, police helicopters would often be seen circling pasturelands, with speaker systems loudly blaring to those trespassing shroomers that they had exactly 10 minutes to

leave the field or they would risk a ticket for trespassing as well as a possibility of being arrested.

At the time, most shroomers living in the Pacific Northwest USA were unaware that the States of Washington and Oregon had over 23 species of psilocybin fungi, and most were common on lawns and in mulched garden beds throughout most cities in both States west of the I-5 Corridor. Those pickers in the pastures of the PNW were not aware of the species that one could freely pick in city parks without being hassled or getting a ticket. So for about an 8 to 10 year period, many of those young shroomers who sought the ever-elusive 'liberty cap' species (*P. semilanceata*) could be subjected to police intervention while on their shromatic quest by receiving a ticket for trespassing.

From 1970 to 1980, during the fall months in the PNW, hundreds of young adults from Bandon, Oregon to Comox Valley in British Columbia, Canada, risk being ticketed for trespassing in pastures of the PNW in search of the elusive "liberty cap" mushroom (*P. semilanceata*). Each year, in the fall months (late August into December), hundreds of young adults were ticketed for illegally trespassing on farmlands as they harvested liberty cap mushrooms. However, there existed in Seattle, a small segment of the mushrooming community who were collecting species of psilocybin fungi off of lawns and several public parks in downtown Seattle. Moreover, those who foraged for mushrooms in the city

knew that they would never be issued citations for harvesting mushrooms in the lawns of public parks throughout the city and the surrounding suburbs.

Psilocybe stuntzii (blue ringers) is the most common magic mushroom occurring in lawns in the PNW. Two other pasture species not associated as growing directly in dung are *P. baeocystis* and *P. semilanceata*. They seem to appear in parks due to fertilizers spread or sprayed into new sod and in topsoil's; the former in lawns and wood-chipped mulched garden beds and the latter only in yards, parks, and soccer fields in the PNW. Although *P. stuntzii* grows in manured soil in pastures, it never grows directly in dung. In a meadow, it is scarce. Once manure is converted into pasteurized fertilizers (solid and/or liquid), it carries within, spores for several species of the magic fungi. Once those fertilizers are added into sod, spores from the composted fertilizers from pastures cause those species to grow abundantly in both public and private lawns, as well as in mulched garden beds.

In the city and suburbs of Seattle, *P. semilanceata* has been harvested in lawns at public parks and gardens around government buildings, as well as on soccer fields and public schools throughout the Puget Sound of the PNW. Mushrooms in public places such as parks, new yards at apartment/condo complexes, well-fertilized sodded lawns at new office buildings, including several local fire stations and even a few Police Departments such as the Downtown Seattle

King County Police Station and Lynnwood city Police Station and Fire Department had carpets of both *P. stuntzii* and *P. baeocystis* in their lawns. These are but some of the locations where magic mushrooms have been harvest in Seattle, Washington. JWA was asked not to pick mushrooms at the downtown Seattle Police Station because officers explained they did not want the prisoners inside to know about the mushrooms outside the jailhouse. The following year a chicken-wire fence had been erected on one corner of the station, unaware that the mushrooms grew in all the garden beds around the whole block of the new Downtown Seattle, Police Station.

In Seattle, one could harvest up to 7 common species of magic mushrooms, and several species that grew all year long. For instance, *P. stuntzii* often grew throughout the year as long as there was no freeze or frost, especially in lawns with automatic sprinkler systems. And interestingly, rarely did the mushrooms or those picking them ever caused any problems.

Local Pacific Northwest news reports about psilocybian mushrooms were quite common in the fall months from late August through December. Each fall, local Seattle AM and FM radio stations would broadcast the annual arrival of the magic mushroom season. During an 8 year period in the PNW, local police, as well as State Police spokespersons, constantly informed local news media in both Washington and Oregon, that their crime labs

had failed in finding any illegal substances in dozens of pounds of confiscated mushrooms that they had seized in drug raids in their States (Egan, 1973; Kendrick, 1976; McCrea, 1975; Sanger, 1976; Unsigned, 7 Nov 1975; Unsigned, 27 Nov 1976; Unsigned, 1 Dec 1976; Wilson, 1976; Daniels, 1980; Padmore, 1980a; Padmore, 1980b).

Dung Inhabiting Psilocybian Fungi Common in Columbia

As previously noted, Guzman (1994) had earlier reported on the ludible use of *P. cubensis* by young people at the Medellin region, where they are known as "hongo rey." It seems that the local peasants have very little knowledge regarding the presence of species other than *P. cubensis* being hawked to backpackers in and around Ville de Leyva. Apparently, not many locals are aware of species other than *P. cubensis* in their environment which would be of interest to the backpacking tourists. However, JCRM has noted that he has been aware that some local shroom lovers in the region are aware of the occurrence of *Copelandia cyanescens* in the region, and that friends of his have, on occasion, consumed that species and found it to be a very potent species in comparison to *P. cubensis*. One might wonder why this beautiful bluing *Copelandia* species is not more well known to those who come from afar to Colombia, seeking a voyage with the help of the indigenous peoples of the land. Like *P. cubensis*, *Copelandia cyanescens* and related *Copelandia* species most likely did not occur in

Colombia before the conquest, yet the species with high psilocine content is most notable by its intense bluing reaction (**Figs. 27-28**). And it seems probable that many of the local peasants in Bogotá who cater to tourist influence are aware of the bluing reaction that occurs in *P. cubensis* (**Fig. 29-30**). Bluing occurs when the mushroom has been damaged by human handling or by natural causes. And in cut caps from stems (**Fig. 31**).

A third common dung-inhabiting mushroom that has been identified from Colombia is the cosmopolitan species, *Panaeolus cinctulus* (Bolton) Britzelm (Syn.=*Panaeolus subbalteatus* Berk & Broom). This species primary habitat is rotted composting hay mixed with horse dung and stable shavings. This species also occurs in manure and in new sodded lawns..

In a short period of time, knowledge and the use of the mushrooms had spread throughout many of the States in Colombia. At Villa de Leyva, stories of suicides, murders, and bad behavior by some under the influence of the mushrooms have caused concern for the local residents of the city. Eventually, local laws were initiated, banning the tourists from setting up their tents and camping on their land. JCRM considers himself as being lucky that he had made some friends in the city so that he feels safe when visiting there.

During the summer vacation months and during the Christmas holiday season, foreigners always find their way to Villa de Leyva. Once here, they immediately set up their camping areas outside of town. Of

course, traveling to the zone during the regular seasons is not as easy as it was years before.

In recent years, local peasants have complained that the foreigners have damaged their farmland fences when entering into the pastures to pick mushrooms. And on occasion, reports that small 3-4 person sexual orgies were going on in the tents of the backpacking tourists. Such activities caused the local peasants to feel that their traditions were being treated with disrespect.

Over the years, Villa de Leyva became so well known to foreigners as a cool place to find mushrooms that backpackers soon began to arrive daily in Villa de Leyva. Most came by bus from Bogotá arriving by bus at the local bus terminal, a common meeting place for friends amongst the many tourists. Soon that terminal also became a place often staked out by the police daily. In that way, the police would check up on any suspicious-looking characters who were visiting their town.

There are other small towns and villages near Villa de Leyva within the area of Periquera Falls where one can also obtain mushrooms from local peasants.

Before too long, new arrivals to Villa de Leyva became aware that one could also seek magic mushrooms in the nearby towns of Arcabuco and Gachantiva. Both cities are close to Periquera Fall and they provide a much safer destination for foreign travelers than for them to be present in Villa de Leyva.

Peasants in Arcabuco appear to be quite knowledgeable regarding edible mushrooms species in their environment. And they also know what species are being sought by foreign visitors in their villages. They are said to be mushroom specialists. It seems that the edible mushroom industry there is promising. Studies had been done around the mushrooms and the Arcabuco peasants who collect the species in their villages (Ruiz, 2019).



Fig. 27. Bluing in *Copelandia cyanescens*. Photo: Courtesy of John W. Allen.



Fig. 28. *Copelandia cyanescens* with bluing. Photo: Courtesy of John W. Allen.



Fig. 29. Bluing in the stipe of *Psilocybe cubensis*. Photo: Courtesy of John W. Allen.



Fig. 30. Bluing in the stipe of *Psilocybe cubensis*. Photo: Courtesy of John W. Allen.



Fig. 31. Caps of *Psilocybe cubensis* when cut from their stems causes a bluing reaction. Photo: Courtesy of John W. Allen.

The Legends of Bachue and the Garden of Eden

Some years ago, JCRM published an independent book, *Los Preludios de la Supersticion Muisca*. In that publication, the author reconstructed his work on the Muisca myths cycle by suggesting that there was a possibility that the Muisca culture was once guided by an ancient mushroom cult.

Near Periquera Falls, approximately 13 km from the colonial town of Villa de Leyva, between the surrounding mountains lies Lake Iguaque. This lake is also in the Colombian State of Boyacá and in 1977, was declared to be a 'flora' and 'fauna' sanctuary. The Muiscas once proclaimed it to be their Garden of Eden. Legend says that the goddess Bachue sprung from the cold, blue waters of the lake, with a small boy in tow. Soon after her arrival from the cold, blue waters, Bachue constructed the first house and proceeded to raise her son. As the boy grew, he soon became a man, and they subsequently married, and their children soon populated the Earth, and they gave birth to all of humanity. Legend then tells that all the Muiscas were born from this couple, and the first Muisca town was founded: Chiquiza, which is also known as San Pedro de Iguaque. There, in the village of Chiquiza, the goddess Bachue created all the laws which the Muisca people lived by. Then she and her husband returned unto the lake, where they both morphed into the shape of two snakes and then disappeared. The Muiscas are considered as being the ancestors of the human race. The name of the goddess

Bachue translated from the Muisca language to the Spanish means "Worthy Breast." It could be a fungal reference to a sacred mushroom.

This fundamental myth of the Muisca tribe is a constant theme amongst those anthropologists who study the histories and oral traditions of the Muiscas. And today, it is still a living story to those inhabitants in Villa de Leyva.

Doña G narrated the tale of Bachue to JCRM during a visit at her home several years ago. It is but one of the many stories she related to JCRM. Doña G also shared with JCRM, a long-ago tale about some nearby caves where the Man-Bats lived, and in those caves, the Man-Bat Priest were initiated into their cult. Doña G referred to the caves as the 'Caves of the Indian and of the Fetus.' Years ago, one could enter these caves freely, but during the past couple of years, the caves have been sealed for preservation because of the vandalism perpetrated to the sites by irresponsible travelers. The Cave of the Indian has rock art in it done by the ancient Muiscas.

Approximately 15 Km from the town of Villa de Leyva in the Moniquirá Valley of this desert zone, one can visit the ancient archaeoastronomical site located on the Altiplano Cundiboyacense in the outskirts of Villa de Leyva. There in the Moniquirá Park, one can see earthworks surrounding a setting of 25 menhirs, which appear as upright

standing stones. Those few who have studied the archaeological dig have suggested that the 25 stones were considered to be a center where ancient religious ceremonies and spiritual purification rites were once performed. To some, the 25 menhirs do have a slight resemblance to phallic imagery, yet those stones could also be representative of an ancient mushroom cult. Some in Colombia refers to the site as the Colombian 'Stonehenge.' At first, only 25-such phallic-shaped stones were initially reported from Infiernito by Colombian Army Geographer Joaquin Acosta in 1847. Later excavations unearthed another 109 similar rocks (**Fig. 32**).

Polymath, geographer, naturalist, and explorer, Alexander von Humboldt, suggested that the alignment of the stones at Infiernito

was used to predict astronomical phenomena by arranging the rocks with that of the sun, moon, and stars. In this manner, one could accurately predict the dates of the solstices and equinoxes by using the stones as he suggested they be used (Reichel-Dolmatoff, 1997).

The site had been designated as "Infiernito" by the invading Spanish Conquistadors. And "Infiernito" in Spanish implies "little hell," so-called because the conquerors believed that it was a diabolical place which the Muiscas used as a site of Pagan worship. It was also believed to have been a temple dedicated to the sun. JCRM suggests that the penis-shaped menhirs are actually representations of youthful mushrooms in their phallic stage of their development and growth.



Fig. 32. Phallic-shaped mushroomic menhirs at the Observatorio Astronómico Muisca in Ville de Leyva. Photo: courtesy of Juan Diego Gomez Rodriguez.

Dictions of the Man-Bats occur at the caves that Doña G spoke of? Was the Muisca use of the astronomical observatory with the penis-shaped mushroom stones related to the myth of the Goddess Bachue? Were they related to the events that occurred at La Periquera Falls? And is the Muisca Man-Bat complex a result of the ancient Muiscas use of entheogenic mushrooms in cultic rituals, during and after the Muiscas agrarian migration into Colombia from the north that occurred sometime between 500 and 1000 BCE? JCRM believes that if his suspicions are correct, then this was all a part of a religious Muisca complex. Furthermore, it seems that the use

of a fungal entheogen may have been an endemic species of *Psilocybe* that was used as a sacrament in the fertility cults at Infiernito. Of course, it is possible that either the food-hunter gatherers of the Muiscas or possibly a member of the priesthood did possess knowledge of many entheogenic plants indigenous to the region (**Fig. 33**).

It is also important to note that some researchers have assumed that Infiernito astronomical complex was built by a culture that preceded the Muiscas. Presumably, the Herrera's were the probable source in regards to the origin of the Infiernito complex.



Fig. 33. Left: Phallic-shaped Menhir. Observatorio Astronómico Muisca. Ville de Leyva. Photo: courtesy of Juan Diego Gomez Rodriguez. **Right:** Amazonian Penis Envy *Psilocybe cubensis*. Photo: Courtesy of John W. Allen.

Since ancient times, the Muiscas, as well as the peasants of today, prepared two fermented drinks known as ‘Chicha’ and ‘Guarapo.’ These fermented beverages were usually derived from the maize and other sources. The Muiscas of Colombia were famous for their knowledge of the processes of the fermentation of their alcoholic drinks. Doña G had also mastered the technique of fermentation, and her ‘Guarapo’ is the true Chicha of the ancient Muisca. The original word that the Muiscas gave in their Muysccubun language for their fermented drink was *fapqua*.

Anthropological studies conducted in Colombia since the 1980s have documented that there still existed a tradition of witchcraft in the region of Villa de Leyva and its proximities. JCRM believes that Doña G could be one of the last remnants of this ancient female witchcraft tradition?

Years earlier, JCRM had discussed the possible use of an endemic species of a psilocybian fungus from Colombia that may have been used by the Muiscas and their followers. JCRM has studied the mycoflora of the regions surrounding Bogotá, Villa de Leyva, and Arcabuco for several years, always searching for an endemic species of *Psilocybe* without much luck. Recently, JCRM told of a friend who wrote about a Colombian peasant who mentioned seeing what was suspected as being an unidentified psilocybian species growing on a tree belonging to the genus *Quercus*.

During JCRM’s last visit into the jungles of the region, he observed the species that appeared to be similar to *Gymnopilus junonius*, a psilocybian species that grows on dead tree stumps

Researchers would be surprised at the vast biodiversity of Colombia. Recently, in the early 2000s, Gastón Guzmán spent some time in the endemic Romeron Pinus forests of Colombia and discovered two new species of entheogenic fungi, *Psilocybe bispora* collected in Antioquia and *Psilocybe columbiana* specimens gathered in the Highland Moors. The specimens were preserved for herbarium deposit. Additionally, JCRM also said that a friend of his had identified *Psilocybe zapotecorum* from Manizales. Over the years, more and more sightings of psilocybian fungi have been brought to the attention of many backpackers in Bogotá and other Departments in Colombia (Fig. 34).

The goldsmithing evidence on display at the Museo del Oro is quite remarkable. Because of the mushroomic-shaped motifs of the gold pectorals, it would seem to suggest that the ancient Muiscas must have used a psilocybian fungal species in their past. None the less, a new question has come to light that opens up one’s mind to questions regarding the possible use of *Amanita muscaria* by the Muiscas.

Were *Amanita* species used by the ancient Muisca priests in their past history? In Villa de Leyva and its surroundings, there are lots of species of mushrooms to be found and identified. They appear in many different

colors, shapes, and forms. Local inhabitants are aware that many species of both wild edible and magic fungi grow in their environment. There are those local peasants who are aware of those backpackers who annually invade their city that seek only the dung-inhabiting species known as *P. cubensis*. And then many mestizos only see the

mushroom that the backpackers seek and have no knowledge of other mushrooms within the confines of their environment. However, in the region of Bogotá and the Moniquirá Valley, *A. muscaria* is very common and grows prolifically during the Christmas season.



Fig. 34. *Psilocybe zapotecorum*. Photo: Courtesy of Alan Rockefeller.

During the past years, *A. muscaria* gained popularity amongst young adults in and around the city of Bogotá. Youths in Bogotá and Villa de Leyva have experimented with the dung fungi, *P. cubensis*, and others have feasted on *A. muscaria*, a species with a history spanning over 2000 years (Wasson, 1967, 1968). So far, no serious incidents have been reported regarding such ludible use by Colombian citizens. This species, with its brilliant bright crimson red cap with white warty spots on it, is familiar and can be found in Cundinamarca, and especially in the many forests of Bogotá (Fig.35). Recently *A. muscaria* is also beginning to become a popular species with young adults in Brazil, as shown in several Brazilian cogumelos pages on Facebook (Fig. 36).



Fig. 35. *Amanita muscaria* with white warty spots. Photo: Courtesy of John W. Allen.

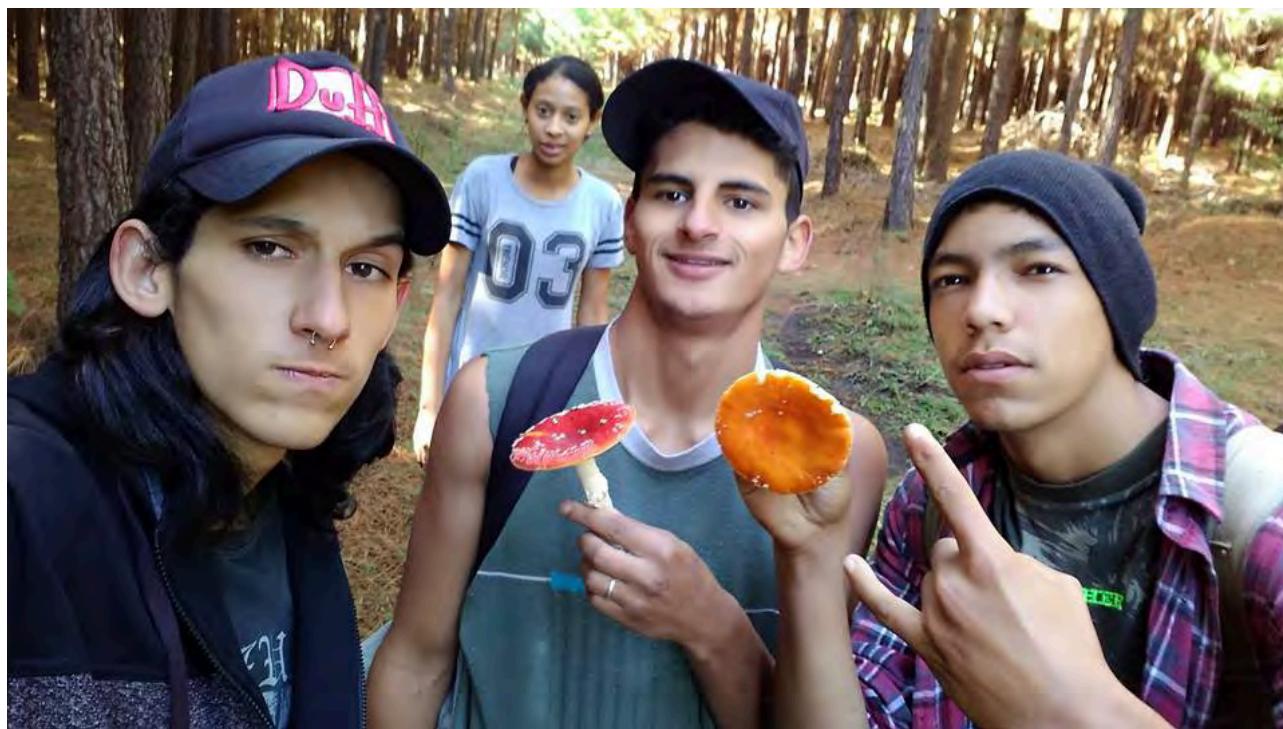


Fig. 36. *Amanita muscaria* in Brazil. Photo: Courtesy of Matheus Varela.

SOMA: AMANITA AND THE MUISCAS



Fig. 37 *Amanita muscaria*. Villa de Leyva, Colombia.

Because of the writings of Schultes (1939, 1940) and the Wasson's (1957; 1958), we know that the ancient indigenous tribes of Mesoamerica had used psilocybian mushrooms before, during, and after the

conquest of Nueva España. However, there seems to be only a single known reference that supports the possible use of *A. muscaria* by the ancient Aztecs-Olmec-Toltec civilizations. That is in regards to a

well-known mushroom stone unearthed at an archaeological dig in Nayarit, Western Mexico, dated from 100 C.E.(Fig.38).

However, there some documentation suggests that both *Psilocybe* species and the possible use of *A. muscaria* existed in pre-Colombian Central and South America. There are many artifacts of a mushroomic nature on display at many museums in South America, which depict goldsmithing works featuring what appear to be representations of mushrooms. Pendants and gold pectorals are standard. These national treasures were excavated in several countries, in both Central and South America, especially from Peru and Colombia. Some of those goldsmithing works are on display at the Museo del Oro in Bogotá, Colombia, and it is the Muiscas and the Man-Bats, which are at the heart of this study. Did the ancient peoples of Colombia, specifically the Tayronas and the Muiscas, once use entheogenic fungi in ritual ceremonies as their key to communicating with their gods?

Sadly, the Spanish invaders, under the auspices of the Inquisition, destroyed every bit of written histories of the indigenous peoples of Columbia and other countries in both Central and South America. Although the Spanish utterly wiped out 95% of the Mayans, their history, and their culture, they did leave alone some remnants as the pyramid-like temples and sculptures of the past. There is also some evidence of mushroom use that had been unearthed over the years, specifically ‘mushroom stones.

Several hundred discovered mushroom stones from Guatemala provide proof of past cultic use of entheogenic mushrooms in Guatemala (Wasson, de Borhegyi, Lowy, 1972). What was the reasoning behind the genocide of the Mayan people, as well as the destruction of their written histories? We can only surmise that it was the desire of the church to restrict such activities as heresy. But they did miss bits of historical evidence on the use of entheogenic mushrooms and other plants still used by shaman in Mesoamerica.



Fig. 38. A Nayarit, Mexico figurine depicting an individual sitting under a gigantic *Amanita muscaria* mushroom. The figurine is 7.5 cm tall, on display in the INAH Regional Museum in Guadalajara Mexico.

Photo © Michael Wood. Courtesy of Carl de Borhegyi.

The literature of Nueva España provides no more than 50 primary references on the history of Mexico during and after the initial conquest of Nueva España. Even worse is the

fact that there is very little historical literature about the prehispanic Colombian people, their cultures, or their traditions in Central and South America. Yet in recent years, we are learning more and more about the past use of entheogenic mushrooms not only in Colombia, but also in Peru, and Brazil.

While academic studies of the Darién gold pendants of Northern Colombia have revealed a possible relationship with entheogenic fungi (Schultes & Bright, 1985 [1979; Falchetti, 1979, 1987, Falchetti, 2007]. Some evidence concerning young fungi enthusiasts in Colombia and Brazil note that some are interested in experiencing the power and secrets of entheogenic mushrooms. And reports also have been circulating that *Psilocybe* species and *A. muscaria* are becoming popular as ludible entheogens in these countries. Furthermore, numerous academic publications feature pictorials of collections of goldsmithing works suggest the possible use of entheogenic mushrooms (*Psilocybe* and/or *Amanita* spp.) in primitive cultures such as those ancient tribal groups of the Muiscas of Colombia and the Mochica (Moche) peoples of Peru.

The Spanish historians, who put forth to parchment, the histories of Nueva España, ‘as they saw it,’ were very cautious when presenting their accounts concerning the use of the fungi and other entheogenic plants when communicating with their gods. Today we recognize the fact that the Spanish conquistadors were extremely mycophobic

when it came to mushrooms. And because of that fear of fungi, they were careful in only presenting negative reports of their use, most likely to appease their religious elders back in Spain.

Historically, there are approximately 50 documents relating to the use of the sacred mushrooms by the Aztecs written during and after the conquest of Nueva España. Nevertheless, knowledge concerning such use by the Mayans and other indigenous people of Central and South America are lacking in the academic literature from the time of the conquest. History from Colombia and other countries in South America indicate the possible cultic use of mushrooms in Peru. However, the Spanish conquerors did record the use of the San Pedro cacti by the indigenous people of Peru.

In the codices and historical documents of Duran, Sahagún, and others, there is documentation that mushrooms were served at festivals as sacraments during ritual human sacrifices. This study suggests that the Muiscas, Tayronas, and the Tolima people of Colombia did use psilocybian fungi in ritual ceremonies like some of the rituals performed by the Aztec priests that involved human sacrifices using mushrooms during those ceremonies in Mexico. In a ceremonial historical context, some documents do support that Chibcha (Muisca) priests also performed rituals involving human sacrifices. And those rituals may have been similar to rituals performed at sacrifices by the Aztec

priests. And of course, some of those sacrificial rituals used the sacred mushrooms during those sacrifices.

"The religion [of the (Chibcha) Muisca indigenous people at the time of the conquest] was dominated by a hereditary but unorganized priesthood that maintained numerous temples and shrines and held elaborate but infrequent public ceremonies. Offerings, especially of gold and cloth, were a prominent part of all religious observances, and on special occasions, human sacrifices were made to the Sun (Unsigned, No Date)."

Since history made us aware of the use of various species of *Psilocybe* mushrooms by the Aztecs, we somewhat lack in information about the Aztec use of *Amanita muscaria*. Or the use of *Amanita muscaria* by their ancestors, the indigenous peoples (the Olmecs, Toltecs) before the conquest. So here under discussion is the fabulous beautiful mushroom of fairy tale books and postcards that features a bright crimson red-head with white warty-like spots covering its head, the species known as *Amanita muscaria*.

THE ANCIENT LEGACY OF SACRED USE

At least 3500 years ago, visionary or entheogenic plants played an important role in religion and most likely helped in the social development and cultural structure of many primitive societies (Schultes, 1976; Schultes & Hofmann, 1979). It is because of the unique chemical compounds found within these

sacred healing plants which ancient man first discovered as he hunted for food that modern science first began putting to paper the historical significance behind the unique relationship which the mushrooms have with mankind; especially with those human and animal entities who have known the secret powers which the mushrooms imbue upon their users.

Psychoactive plants were initially discovered by early humankind when gathering food and so history has proven to us, time and again, that it was only through trial and error, undoubtedly by early food hunter-gatherers, that the true identities and nature of these divine plants, and the substances contained within them, first became known of and separated from the toxic and edible species found growing around their village settlements.

It would seem that the early food-hunter gatherers, who became aware of the special properties found within these magical plants, would soon worship them and use them to divinate, to heal and to cure. Imagine if you will, the very first concept of deity. The first tasters had to believe in the gift which emerged from that first sacred communion with these plants. And once under their influence, primitive peoples came to believe that the vision-giving powers of these magical plants were indeed a divine gift from the gods.

We must remember that it wasn't just one plant that altered mankind's consciousness. It was hundreds of plants throughout the world.

Plants that soon became the driving force of many arcane religions practiced by shaman in pagan-barbaric societies. There they eventually found their way into the hands of the priests and shamans (medicine men); men and women who learned how to use the power of these plants to their own benefit, believing that they were, indeed, gifts from their gods.

The oldest representation, which suggests the possibility that mushrooms may have been used ritually, is the Tassili Cave paintings in Northern Algeria (Samorini, 1992). Here we find zoomorphic figures whose bodies are adorned with drawings of what macroscopically appear to be mushrooms. These drawings have been dated from at least 9000 BP. The mushroom drawings appear to resemble the coprophilous species *Psilocybe cubensis*. However, cattle and other four-legged ruminants were not known to have been domesticated during this period, so it seems that the mushrooms in question must have been different varieties that were not of a coprophilous nature. It is also possible that this region of Northern Algeria could have been a lush green oasis with a variety of vascular plant life, which eventually turned into a tropical desert region due to drastic climatic changes.

Mankind has learned through historical references in the known literature that two ancient civilizations utilized mushrooms in a religious context. These two distinct civilizations were so far remote from each other, not just geographically, but also

culturally, yet they knew the secrets of the universe that we of the present have forgotten.

Although visionary plants have been used as catalysts to divination by dozens of past civilizations since mankind first walked the Earth, only two civilizations are of significant importance in the field of ethnomycology. The most notable of the many cultures who employed some of these psychoactive plants as a key to divination was allegedly the ancient Aryans of Northern Eurasia, while the Aztecs and other Mesoamericans, as well as the Mayan people of Middle America also employed certain mushrooms in their rituals and culture. And now there is interest in the possible cultural use of mushrooms in Colombia, Peru and other regions of both Central and South America.

The Aryans are believed by some to have made use of a sacred divine god-plant, which they, in their written records, often referred to as "Soma." It has been theorized that the entheogen in question is a mushroom species known as *A. muscaria* (Fr. ex L.) Hooker. The virtues of Soma are known, exalted, and praised in hundreds of verses throughout the 9th and 10th mandala of the Rig-Veda (the Vedic scriptures). Use of this sacrament (Soma) by the ancient Aryan priests and their people had flourished for more than two thousand years (Wasson, 1967, 1968, 1970a, 1970b, 1971, 1972, 1979a). Now it is only an external memory in the pages of Vedic history, its use having been aerated by

western civilization. In recent years, 'Soma' secrets are again being questioned as to exactly what was the 'Soma' potion of the ancient Aryans, and when did the use of 'Soma' disappear? We need only to look and maybe we shall find the answer. Although R. Gordon Wasson suggested that 'Soma' was a

mushroom, probably *A. muscaria* (**Fig. 39**), Wasson pointed out that this mushroom was worshipped by the ancient Aryans, and that several groups of primitive tribes currently living in Northern Siberia also have used *A. muscaria* mushroom in a cultic manner.



Fig. 39. Soma (*Amanita muscaria*). Photo: Courtesy of John W. Allen.

A recent publication suggested several other plants, *Cannabis sativa* (marijuana), *Peganum harmala* (Syrian rue), and even the coprophilous mushroom *P. cubensis*, may have been the 'Soma' of the ancient Aryan religions (Riedlinger, 1993). Currently, a renowned scholar has claimed that he has identified the actual Soma plant and is writing his doctrine on its identity and cultural use.

In Mesoamerica, the Olmecs, the Toltecs, the Aztecs, and the Mayans, employed numerous visionary plants ritualistically in healing ceremonies. Mushrooms were one of the most important of the psychoactive agents employed by the Aztecs and their ancestors, the *Náhuatl*-speaking peoples. These sacred mushrooms belonged principally to the genus *Psilocybe*. Several investigators who first studied the use of these plants in Mesoamerica have pointed out that some species of *Panaeolus* and *Conocybe* may also have been employed in ritual healing and curing ceremonies, as well as a species of *Amanita*. Several of the early Spanish chroniclers in their historical works noted that the Aztecs often referred to these mushrooms as "teonanácatl" or as "wondrous mushrooms." Schultes and Hofmann (1979) pointed out that some indigenous peoples of pre-Columbian Mesoamerica may also have employed *A. muscaria* ceremoniously, for which there is no convincing evidence.

The past sixty-two years since the Wasson's (Wasson, 1957; Wasson and Wasson, 1958) announced their discovery of the cultic use in Mexico of the entheogenic fungi, there has been a dramatic increase in the ludible use of psychoactive fungi throughout the world. Interest and use of these mushrooms has been well documented during this period (Allen, Merlin & Jansen, 1993; Gartz, 1996; Stamets, 1996; Ott 1978, 1993; Ott and Bigwood; 1978; Pollock 1974, 1976, 1977-1978; Singer, 1978; Weil 1975a, 1977, 1980; Metzner, 2014; Allen, 2014).

Sadly enough, most people who consume these visionary mushrooms do so as a form of diversion, yet other societies outside of México who employ entheogenic mushrooms do so in a ritual context.

Today there are more than six indigenous groups of *Náhuatl* speaking Indians, ancestors of the ancient Aztecs, residing in remote mountain villages in southern Mexico (Guzmán, Pers. Comm, 2015). Many of these groups of indigenous people still employ individual psychoactive plants in traditional magico-religious healing and curing ceremonies. The wise men and shamans (both male and female) have kept alive, and in secret for over three thousand years, a treasured practice held most sacred by their ancestors.

As mentioned earlier, the sacred mushrooms are today used primarily among the Mazatec, Zapotec, and other Indians of Oaxaca, high in the eastern cordillera of the Sierra Madre. The use of the sacred mushrooms occurs primarily among the following indigenous groups: the Mazatec, Mixtec, Míje (Mixes), Chatino, Chinantec, and Zapotec (Wasson, 1957a; Heim & Wasson, 1958a). In 1976, Schultes noted that the Nahua of México, the Otomie of Puebla, and the Tarascans of Michoacán also employed certain mushrooms in healing ceremonies. Guzmán, in a pers. comm. to JWA (2014), noted that while Indians originally may have used many different species of fungi, in 2014, Guzmán said that today only six species are known to be used.

The use of psilocybian fungi in cultures outside of Mesoamerica cannot be conclusively inferred from the ethnographic evidence, although; evidence indicates possible use in Siberia and Africa. However, an eighteenth-century report from a Jesuit priest who lived among the Yurimagua Indians of the Peruvian Amazon region (Heim & Wasson, 1958a; Heim, 1963; Pollock, 1977-1978; Schultes, 1966, 1976), wrote that he observed Indians drinking a potion brewed from an unidentified "tree-fungus" which had been mixed with a red oil. This drink allegedly

caused inebriation. The identity of the mushroom in question remains a mystery to this day, but could it possibly have been a *Psilocybe*; mayhap *Psilocybe yungensis* Heim, a wood-debris fungus known from this region of the Amazon (Guzmán, 1983; Schultes & Hofmann, 1980), or possibly *Gymnopilus purpuratus* or *Gymnopilus subpurpuratus* (Gartz, 1996).

Ritual use of other entheogenic fungi by primitive peoples is not just restricted to North America but has been known to have occurred in other areas of the world.

PALEO-SIBERIAN

Isolated groups of Finn-Ugrian people, the Ostyak, and the Vogul of Western Siberia are known to employ shamanistically *A. muscaria*, as did the Chukchee, Koryak, and Kamchadal people of Northeastern Siberia (Heizer, 1944; Brekham & Sam, 1967; Wasson, 1968; LaBarre, 1975). Other reports have indicated and/or have actually been verified that the use of *A. muscaria* is not just restricted geographically to certain regions in western and northern Siberia. Both Graves (1960) and Schultes (1976) pointed out that some Finns and Lapps, as well as a small enclave in Afghanistan, may have used and still do use *A. muscaria* shamanistically (Graves, 1960; Schultes, 1976). Both authors also have reported on its possible use in Japan and the Philippines. Regarding the use of such fungi by Finns and Lapps, it should be noted that the Finns also encompass a group of indigenous peoples known as the Sámi.

The Sámi people (also spelled Sami or Saami) are an indigenous Finno-Ugric people. They inhabit Sápmi, which today encompasses large northern parts of Norway and Sweden, northern parts of Finland, and the Kola Peninsula within the Murmansk Oblast of Russia. The Sámi have historically been known in English as Lapps or Laplanders. Sámi ancestral lands are not well-defined. Their traditional languages are the Sámi languages and are classified as a branch of the Uralic language family (see Wikipedia for related data).

The use of *A. muscaria* was recently reported among some groups of North American Indians (Wasson, 1979b). In her books "Windmills of the Mind" and "Hallucinogens: Cross-Cultural Perspectives," Marlene Dobkin de Rios (1976, 1984) discusses the strange custom of *Amanita* urine-drinking by the

reindeer herdsmen of Siberia. This intriguing habit had first been reported by travelers and explorers in Siberia during the late seventeenth and eighteenth century. Similar evidence of the urine-drinking is also

mentioned in the Vedic scriptures (Wasson, 1968). It has been suggested that some psilocybian mushrooms may have also been employed traditionally in primitive Siberian shamanistic cultures (Wasson, 1968).

North American Indians

In North America, *A. muscaria* has been observed and reportedly used among two different groups of Native American Indians:

- 1). The Dogrib Athabascan (Schultes & Hofmann, 1979) and
- 2). The Ojibway of Northern Michigan, U.S.A; and Ontario, Canada Keewaydinoquay, 1978, 1979, 1998; Wasson, 1979b).

The use of *A. muscaria* by Native American Indians dates back over four hundred years. This is the only record of a group of North American Indians who have used a mushroom as a sacrament.

Active ingredients isolated from *A. muscaria* and some related species include ibotenic acid and muscimol (Salemink, 1963; Eugster, Jolly & Good, 1965).

The same causative agents have also been isolated from a similar species; *Amanita pantherina* (DC: Fries) Krombh. (Takemoto, Nakajima & Sakuma, 1964). Both of the species mentioned above are sometimes employed as recreational drugs in the Pacific Northwest region of the United States (Ott, 1978; Weil, 1977, 1980). Furthermore, there are several other species of *Amanita*, which also contain these classical agents (Ott, 1993; Guzmán, Allen & Gartz, 1999).

Thus, a question that has eluded those whose interest lay in the new field of ethnomycology has been put forth. "Was the fungi *A. muscaria* used as a sacrament, as was tobacco, in ritual ceremonies by the Tayronas and Muiscas in a prehispanic Colombian Mushroom Cult?"

Although *A. muscaria* grows quite abundantly around the city of Bogotá, it is also known to occur in Boyacá, Santander, and near the

regions of Arcabuco and Villa de Leyva (sharing the same zone as the Iguaque Zone); and throughout much of the mountainous areas of Colombia.

Informants (young adults) in the region have spread the word that *A. muscaria* is very popular in and around the city of Bogotá. JCRM noted above that he had recently observed *A. muscaria* growing in a garden across the street from his home in Bogotá.

On another walk-about, JCRM reported that he had found an unknown species of *Amanita* that fruiting in the Botanical Gardena in Bogotá. After sharing his find with some friends, one of those friends told JCRM that the specimen he found in the Botanical Gardens could be *A. gemmata*.

While *A. muscaria* is often referred to in the literature as ‘Soma,’ it covers a history expanding more than 2000 years (Unsigned A; Unsigned B; and Unsigned, 2005), yet still not much is known about this potion that is known as “Soma.” The known literature is lacking in that no more than 800 papers and as many as 40 or more original books have appeared in print since R. Gordon Wasson published his monumental classic work, *Soma, the Divine Mushroom of Immortality*. In another edition published the same year, R. Gordon Wasson added renowned Sanskrit scholar and translator, Wendy Doniger O’Flaherty, as a co-author (Wasson, R. G., 1968; Wasson & Doniger O’Flaherty, 1968). In that study, the authors identify *A. muscaria* as the source of a potion described in the Rig Veda as ‘Soma.’ Over the past hundred years or more, this mushroom has been a photographic boon to mushroom lovers, and numerous books have been published about *A. muscaria*. Its possible identity as a candidate for the SOMA potion of the Vedic Hymns of India has appeared in print. R. Gordon Wasson’s remarkable book *Soma Divine Mushroom of Immortality* with Wendy Doniger O’Flaherty is probably the best research to the date regarding the elusive

identity of the mysterious plant used and celebrated by the ancient Vedic poets.

It was R. Gordon Wasson who first suggested in his studies that *A. muscaria* was the ‘Soma’ potion as he had written of in his book, as well as in several scholarly academic published papers. Over the passing years, other scholars and authors were at odds as to the true identity of the entheogenic plant or fungi described in the 9th and 10th mandala of the Vedic hymns of the Rig Veda (Riedlinger, 1993).

Approximately eight years had passed since Wasson’s *Soma: Divine Mushroom of Immortality* was initially published in 1968. By 1977-1978, two major conferences on hallucinogenic fungi presented new documentation, announcing for the first time publically, that an *Amanita* mushroom cult existed in North America. And in recent years the variety of the North American variety of *A. muscaria* has been identified as being somewhat different than that of her European sister. The research suggested that the European type was more potent than the American variety, suggesting that its potency and differences depended more as to the location where it is found. Yet that has not been proven because specimens can produce different amounts of the active ingredients from location to location and from individual specimens as well.

In Colombia, any suggestions that the ancient peoples of Colombia used *A. muscaria*, well, that idea has been instantly dismissed by both

the Academy and actual Colombian Indians. It seems that there is confusion amongst the botanists of the country that *A. muscaria* did not occur in Colombia until after the conquerors had introduced exotic *Pinus* trees into the Colombian environment. Similar arguments were intended to discredit reports that the indigenous native peoples of Colombia once used psilocybian fungi in prehispanic mushroom cults before or during the time of the conquest. The case often under discussion is that psilocybian fungi did not occur in Colombia until the arrival of the Spanish who introduced cattle into the New World. Moreover, of that matter, it was in regards to the coprophilous common species, *P. cubensis*. However, many species of *Psilocybe* do not occur in the dung of four-legged ruminants, and several non-coprophilous psilocybian species are common in Colombia. Furthermore, *A. muscaria* is a cosmopolitan mushroom that has a worldwide distribution; present in many regions of the world.

In Colombia, there is an endemic tree, *Quercus humboldtii*. Its common name is the Colombian Oak and *Amanita flavaconia* has been observed and reported as fruiting by this Oak tree. It seems that two variants of *A. flavaconia* are known from the Oak forests of Colombia. Both *A. flavaconia* var. *sinapicolor* and *A. flavaconia* var. *inquinata* have been described as being endemic in Colombia. Those two species are not active entheogens; however, they do, at times, macroscopically resemble *A. muscaria*.

There is a codex from the time of the Conquest of Nueva España known as '*Popol Vuh*'! It is an account on the mythology and history of one segment of today's K'iche' people of the ancient Mayans that inhabit the Highlands of Guatemala, living Northwest of the present-day Guatemala City.

This codex presents a basis for a narrative of the K'iche' people before the Spanish conquest of Guatemala and includes the story of the Mayan Creation Myth. Moreover, in that codex, there is a reference that the fungi, *A. muscaria*, may have been the basis of a religious mushroom cult before the conquest.

The codices are "Books of the Community," and/or "Books of Counsel" or as it implies, they are "Books of the K'iche People (K'iche'), or Quiché, a Maya language of Guatemala, spoken by the K'iche' people of the central highlands. This rare document from the 1500s was passed down through oral tradition from generation to generation. Eventually, in the year 1550, the text was finally put forth to paper by an 18th century Dominican Friar, Francisco Ximénez, who translated the original text into Spanish (Popol Vuh, 1550, 1950; Recinos, 1947). Popol Vuh's text was of great importance due to the early accounts of the Mesoamerican mythologies destroyed by the Spanish as their conquest spread from the east to the west through Guatemala into Mexico; eventually purging the documented histories of the people of

Central America and Mexico, and even later into Colombia and the rest of South America.

There are two references to the famed 'mushroom' stones of Guatemala. Both references suggest that entheogenic species of fungi were taken as sacraments used in sacrificial ceremonies that belonged to an ancient religious mushroom cult of the Mayan K'iche people.

1). "At that time, too, they began to worship the devil. Each seven days, each 13 days, they offered him sacrifices, placing before him fresh resin, green branches, and fresh bark of the trees, and burning before him a small cat, image of the night. They took him also the mushrooms, which grow at the foot of the trees, and they drew blood from their ears (Recinos, 1953)."

A 2nd reference suggesting the Mayan people belonged to an ancient mushroomic cult before the conquest of Guatemala was further supported by the "Book of the People."

2). "And when they found the young of the birds and the deer, they went at once to place the blood of the deer and of the birds in the mouth of the stones that were Tohil, and Avilix. As soon as the blood had been drunk by the gods, the stones spoke, when the priest and the sacrificers came, when they came to bring their offerings. And they did the same before their symbols, burning pericon (?) and holom-ocox [the head of the mushroom, holom= head, and ocox= mushroom] (Popol Vuh, 1550, 1950; Recinos, 1953)."

Famed anthropologist, Stephan deBorhegyi, believed that the words holem-ocox in K'iche and Kakrhiqel are the same word.

Moreover, that *kolom-ocox* is not "mushroom heads, but mushroom caps," or in scientific terminology, the pileus of the mushroom.

Amanita muscaria, when soaked in water over a short period, eventually turns to a blood-red color. Even the Siberians who used *Amanita* knew of the process for making red-dyes from the *Amanita*, as did the Mayan people, and both cultures also believed that it was related to the thunderbolt of Norse mythology.

In June of 1973, Bernard Lowy was interviewing three young students (Quiche-Spanish) speaking linguists in regards to the name and history of *A. muscaria* in Guatemala (Lowy, 1974). After showing these students a photograph of *A. muscaria*, Lowy inquired of them if they knew the name of the mushroom in the photograph. Their name for this mushroom in the Quiche idiom was "kaqljá," however, when translated into Spanish; it became "trueno," meaning thunder. Lowy (1974), wrote that *"After consultation among themselves and questioning by myself and Dr. William Norman, Quiche specialist, it was evident that it was not thunder alone that was signified by "kaqljá," but the accompanying lightning as it strikes the ground during a storm. The equivalent term in Spanish is "rayo." This was clearly differentiated from the Quiche word "xkoyopá :," or "relampago" in Spanish, a lightning flash, which, according to my informants, was never used to designate the mushroom. It is of interest too, that the native speakers could offer no explanation for the use of the word "kaqljá:" for A. muscaria, indicating only that it was common usage. Its ancestral origins have long since been forgotten. To my*

knowledge (Lowy's), this is the first report that the thunderbolt and *A. muscaria* have been found to be intimately related in the folklore of an indigenous population in the Americas [with that of the Siberian reindeer tribesmen known to employ *A. muscaria* in ritual ceremonies] (Lowy, 1974; Heizer, 1944; Wasson, 1960, 1964, 1968, Wasson & Doniger O'Flaherty, 1968)."

JCRM noticed that the Mayan words for the *Amanita* indicated a thunderbolt and was very surprised that the thunderbolt legend had also been noted in Norse mythology and was also known by the Siberian shaman in their histories as well. JCMR also followed the writings of R. Gordon Wasson and Wendy Doniger O'Flaherty's *Soma: Divine Mushroom of Immortality*, which spoke of the Vedic Hymns devoted to a cultic use of *A. muscaria* in their society more than two millennia ago (Wasson & Doniger O'Flaherty, 1968).

Furthermore, JCRM read about the Vedic use of Soma, and several codices that were written during and after the conquest of Nueva España in regards to the mushrooms of the New World. He also read several of R. Gordon Wasson's journal publications on *Soma* and the Siberian reindeer tribesmen who used the *Amanita* species. In his studies of this species, JCRM soon realized that the known history regarding the ritual use of *A. muscaria* around the world was all connected through the known academic literature. Over the centuries, the use of *A.*

muscaria in paintings, fairy tales, and children's stories indicated knowledge that there were special hidden meanings concerning the mushrooms throughout history. Many mushroom fanciers seem to find hidden meanings in mythology regarding *A. muscaria*. Amateur anthropologist Carl de Borhegyi (2010) described from encrypted codes, a hidden history of shamanic use of this species in Siberia, its close association to the Norse legends of the 'thunderbolt' mythology, and even stranger, its suggested relationship of the red and white *Amanita muscaria* fungi as being related to the Santa Claus mythology, along with the myth behind the Reindeer herdsmen of Siberia. However, some have cast doubt on the Santa myth. In a private conversation with the late Richard Evans Schultes, JWA learned that the Santa Claus myth was nothing more than an old wife's tale. However, Schultes offered no reference during the conversation that would indicate the actual reasons supporting the debunked the Santa myth.

The Legend of Bochica

Local informants had shared with JCMR many stories regarding the history of the Muiscas of Villa de Leyva and its surrounding villages. To JCRM, they were beautiful stories, and one, in particular, was the tale of how the ancient inhabitants of Atlantis had once visited these ancient lands long before the arrival of the invading Spanish conquerors.

There is, in the history of the peoples of Colombia, a cultural hero known as Bochica, a bearded man who came from the East. He was also known as *Nemqueteva*, *Sadigua*, or *Xué*, which means the Sun. It is said that the Muiscas once worshipped Bochica, and while his origin remains unknown, it seems that there are several similarities between the legends of Bochica with those of Mexico's serpent god *Quetzalcoatl*. Those similarities have led some scholars to believe that *Quetzalcoatl* of the Aztecs and Bochica of the Muiscas was the same individual who was known under various names in several other countries in Central and South America.

One such legend tells of how Bochica came to their land from the highland village of Chingaza, far to the east of Colombia with a message for all the people and showed the natives how to plant crops, make clothing, and build houses. There are legends of Bochica still told amongst the peoples of the land. Moreover, Bochica was revered by those who believed in the old ways of the Gods; however, he too was said to be of white skin, white hair, and a long white beard. As legends go, he appeared from out of nowhere riding a bizarre animal that no one had ever seen before [most likely a horse, JWA], and he was prolific in his knowledge of morality and religious tradition; teaching all the people of the land who revered him as a god how to live in peace with one another. Legend has it that Bochica taught the Muiscas to worship only one supreme God – *Chiminigagua*, and that the peasant peoples of the land need to learn to

love one another and never do wrong against their neighbors, their friends or their families. Some indigenous Colombian people, like the Chibcha natives, tell stories that Bochica arrived in Colombia at a time of great chaos.

Moreover, they still tell how Bochica was a gentle, humble man who taught the people that war was immoral and that the peasant was wrong to worship idols. Some said that Bochica could heal the sick by touching them as Jesus Christ was said to have done 2000 years ago. Moreover, Bochica was also known to have given sight back to those who were blind, as Jesus also was said to have done (Sutherland, 2016).

Legends of Bochica are still alive among the Native Indian population of Colombia. Today these stories of Bochica are always remembered and revered by the people of Colombia. Another legend around Bochica tells us that the Muiscas had forgotten the old teachings of Bachue and so they had descended into a period of debauchery. They spoke of how the evil goddess Huitaca corrupted the ancient laws of the people, and that, in turn, caused the god Chibchacum to become enraged over the new attitudes of the Muisca as the people had forgotten the old gods and their teachings. Because of that, Chibchacum had decided to exterminate them by flooding the Muisca territories.

Chibchacum was the protector of the cacicazgo del Zipa and the protector of the town of Bacatá. His name also referred to his staff, and so it was known as "Chibchas

Staff," and he was the god of merchants and farmers. Like many other Gods in other cultures, He was like the God of Agriculture and probably of fertility as well. They say that the ancient Muisca people claimed that Bochica came from the highlands, from a land known as Chingaza in the Eastern part of the country, and that he had come with an essential message for all the people.

In this legend, Bochica faces Huitaca and transforms her into an owl, yet other versions of the myth tell us that Bochica had turned her into the moon. Huitaca was the goddess of arts, dance and music, witchcraft, sexual liberation and the Moon. According to the Muisca legends Huitaca was a goddess of extreme beauty who praised a life full of joy, games, pleasure and drunkenness who was rebelling against Bochica and that is when he turned Huitaca into a white owl (Wiki). Bochica then later defeats Chibchacum and punishes him by having him carry the world upon his shoulders (like the Titan, Atlas). The last act in this adventure of Bochica tells us that he appears over a rainbow carrying in his hand his magical staff that turns into a

thunderbolt. Furthermore, whenever and wherever he aimed his staff, lightening from his thunderbolt-like staff, would then strike all over the rocks that contained the waters of the land, which caused the gushing waters to flood over the areas Bochica promised to protect. According to the legend, this was how the famous Salto del Tequendama Water Fall came into being near the city of Bogotá. The Muiscas then celebrated the victory of Bochica who then reminded them as he stood upon the rainbow not to forget the ancient laws. That was how Bochica saved the Muiscas from extermination from the first deluge myth passed down over the centuries through oral tradition by the Muisca priests.

Another aspect of the Bochica legend told how he had suddenly disappeared from the land, and the only evidence reminding us of his presence on the Earth was a single footprint that he had left behind, forever embedded in a boulder next to the Tequendama Water Falls of the Bogotá River in San Antonio del Tequendama, a municipality and town in the Tequendama Province.

Comparing Old World Myths with those of the New World

There are in the academic and historical literature, numerous references indicating that Bochica's footprint in stone bares some similarities to that of the legend behind the Bull-Slaying God Mithras. Often depicted as an Iranian God, Mithras also was described as

birthing from out of a rock, and he was also worshipped in ancient Rome around the 1st to the 4th Century A.D. When Mithras first appeared, he arose from out of a stone, standing utterly naked to the world. Suddenly he instantly aged from a child into a young

man, holding a dagger in one hand and a torch in the other. Tales tell us that he was standing completely nude with his legs together and that he was wearing a ‘Phrygian Bonnet’ (cap). Some legends say that flames were shooting from the rock of his birth as well as from his hat. Another myth was that an amphora had suddenly appeared (a vase usually used for holding wine, or possibly a potion to inebriate one) as he emerged from out of that rock.

Moreover, some historians noted that Mithras birth was like that of an ‘egg birth’ or possibly a ‘tree birth.’ Other interpretations show that the delivery of Mithras was, on occasion, celebrated by lighting torches or candles (Vermaseren, 2011). Interestingly, the cap of flames could indicate *A. muscaria* as well as the ‘egg birth’ or ‘tree birth,’ all part of the myths associated with the many folktales of his creation. The mere mention that there were lightening torches that flashed from his hands might also refer to the thunderbolt mythology of the Siberian and Norse myths.

Not only did the Mithras cap resemble the ‘Phrygian Bonnet,’ it also resembled the ‘liberty cap’ fungi, *P. semilanceata*, a species not known to occur in Colombia. However, *P. antioquiensis* is macroscopically very similar

to *P. Semilanceata* and is known of in Chile, Canada, the U.S.A., the U.K., Australia, and much of Northern Europe as the ‘liberty cap’ fungi. The epithet, ‘liberty cap’ refers to the shape of hats worn by peasants before, during, and after the French Revolution (See Fig. 7-8). The form of those hats represented a symbol of freedom and liberty to those patriotic peasants who wore them in their fight against the tyranny of their rulers (Weil, 1980). Did the French also perhaps consumed the ‘liberty cap’ species?

There are some similarities between archaic European myths and their relationship to the lore of the prehispanic oral traditions of the Americas that speak of the ancient Norse, who believed in a god named Odin. Often Odin was featured in sculptures and paintings as having two ravens sitting upon his shoulders and the ancient Muiscas of Colombia had a similar god, Chiminigagua, who, like Odin, also had two blackbirds sitting upon his shoulders. One of the foundational myths of the Muisca people tells us that in the beginning, there was total darkness, and then Chiminigagua appeared. Then two birds (some versions identify them as being like ravens) sprang forth from the shoulders of Chiminigagua, and one flew to the left and the other to the right. From their beaks, a brilliant light began to flow outwards, and that was how their universe came to be. Afterward, the two birds flew away until, never to be seen again, leaving no trace whatsoever that they had once been there.

Amanita muscaria and the Thunderbolt Legend in Colombia

Odin had a son named Thor. Legends of Thor have been told throughout the ages via 'oral' tradition and in the literature, eventually becoming an inspiration appearing in comic books and films in America and Europe. Thor was designated as the God of Thunder and was armed with a magical hammer, 'Mjolnir.' The Mjolnir was the same as a thunderbolt, and only Thor was capable of controlling its power. Is it possible that the Mjolnir of the Norse mythology also represents an entheogenic mushroom such as *A. muscaria*. The Muisca hero Bochica, at times, had been revered like a god, and Bochica armed himself with a thunderbolt as Thor had done. History tells us that the Norse legend and the Bochica legend both speak of a time when an *Amanita* species had appeared from a thunderbolt striking the Earth and was born like an egg from which it emerged. Throughout history, we have learned that primitive peoples once believed that one could find the *A. muscaria* mushroom growing wherever a thunderbolt had stricken the Earth (Lowy, 1974). Druids and pagans of archaic

societies in Europe, after being pursued by the church, seemed to have encoded their secrets around entheogens in their oral traditions, arts and crafts of the time (DeBorhegyi, 2010).

Throughout history, one could always find images of *Amanita muscaria* in the fairy tale literature of the Brothers Grimm, as well as in many children's books of the 1800s. Many European postcards of the mid-1800s depicted images of *A. muscaria* and were common up until the early-1910s (**Fig. 40**). When motion pictures began to spread across America, and elsewhere, *A. muscaria* started to appear in numerous animated and live-action films on the Silver Screen. In the prehispanic indigenous oral traditions, this lore has also been well-preserved by essential narrative resources that mention both magical fruits and staffs; the latter were symbols of magic and lightning bolts and fruits that made inebriating intoxicants such as wine.



Fig. 40. Image of 1904 postcard featuring *Amanita muscaria*. 1904Courtesy of Tjakko Stijve.

Some legends referred to Bochica as a Viking and over the past 3 centuries, reports in the academic literature described a potion taken by the Vikings before going into battle. Those who partook of that potion were known as 'berserkers' (Fig. 41).. However, in a private communication to JWA, ethnobotanist Richard Evans Schultes informed JWA that the berserker story had been debunked (Schultes) 1986). In fact, Berserkers were a special group of elite Viking warriors who went into battle without traditional armor. Instead, they wore animal pelts, typically from bears or wolves. The word "**berserker**" derives from the Old Norse "serkr," meaning "coat" or "shirt," and "ber," the Norse word for "bear" (Berserkers, 2010).

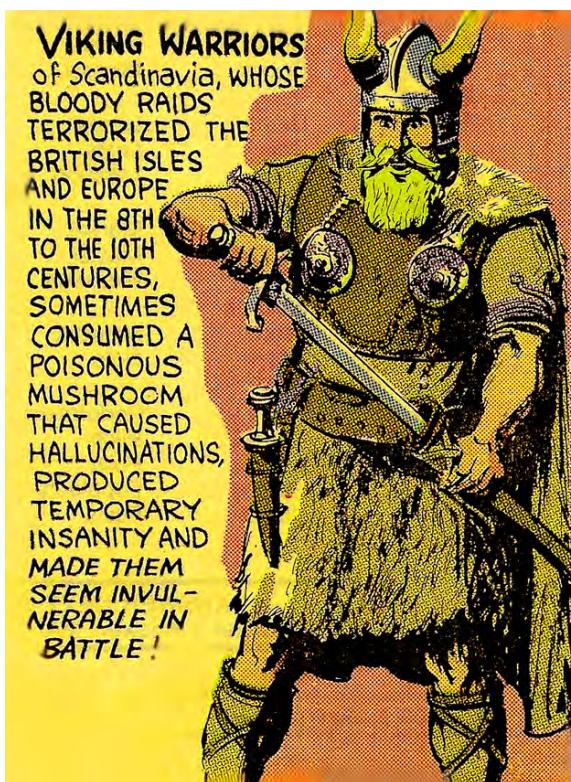


Fig. 41. From a Sunday Section of a Newspaper.
Circa 1970s

Another legend of sorts mentioned that Bochica might have arrived in a spacecraft from outer space (Escribano, 2000). Others tell us he was some Asiatic religious leader. Muisca legends note that the Goddess Huitaca was a significant figure in the history of the Muiscas who, like the Greek Goddess Hecate, were known to have belonged to cults that worshipped both witchcraft and the moon. We, the authors of this study, believe that the Muisca people share an etymological similarity between the names of both Hecate and Huitaca. However, etymologically, those two names of the Goddesses bare no relationship to one another. Long before Greek culture had been established, Huitaca was adored as a witchcraft Goddess. .

Very similar in concept to that of the ancient Greek god Atlas and an ancient Hindu deity Kurma, a giant turtle, who has likened too Vishnu's second avatar, were both punished for their sins and were forced to carry the world upon their shoulders (Grundhauser, 2017). Historically, of the legend of Bochica, the God Chibchacum was portrayed at times as a blue giant who held the world upon his shoulders. It was Bochica who had decided to punish Chibchacum for not protecting his people and so Bochica condemned Chibchacum with the task of carrying the earth upon his shoulders. The Muiscas believed that the tremors and earthquakes were caused by the protective god of Bacatá, who, tired of carrying the globe on one shoulder, passed it to the other. And so the Muiscas believed that was what caused an earthquake to happen. Due to the similarity between the Greek myth and the Chibcha myth, Chibchacum became referred to as the

"Atlas el Chibcha." Because of those legends, JCRM suggested that Chibchacum might have been interpreted as being a mushroom of the *Psilocybe* type?

Similar legends of the 'turtle' world were also common in China, and amongst some Native American tribal groups of indigenous peoples such as the Iroquois Indians (Turtle World, 2019).

Amanita muscaria grows abundantly in and around Villa de Leyva (Fig. 42), as does the coprophilous species, *P. cubensis*. It is effortless to find both species throughout most of the year after heavy rainfall. According to JCRM, December is best for harvesting both *Amanita muscaria* and many other species of *Psilocybes* found in and around Bogotá.



Fig. 42. *Amanita muscaria*. Photo: Courtesy of John W. Allen.

Furthermore, JCRM also believed that he had recently observed *P. mexicana* growing in the fields surrounding Villa de Leyva-Arcabuco. However, as previously noted, *P. antioquiensis* at times, macroscopically resembles the 'liberty cap' fungi *P. semilanceata* which also mimics and resembles at time, *P. mexicana*. Furthermore, all three species have many of

the same characteristics of other species belonging to the genus *Psilocybe*.

It is evident that so far, there are no documented records that support the hypothesis that *A. muscaria* fungi were used in a cultic manner by the ancient tribes of Colombia. JCRM and JWA both suspect that if such use had existed, then that use was kept

secret during the conquest of the New World. Probably because the Spanish, as previously noted, were extremely mycophobic when it came to mushrooms. They would have violently opposed any use of mushrooms by the indigenous peoples of Colombia. It is the belief of the authors that *A. muscaria* was not only endemic to Colombia but also throughout the Continent of South America. Its ludible use as an entheogen in the State of Parana, Brazil, where it has become a popular species amongst young adults, is well known. Colombia is also home to several other species of *Amanita* that are not active species,

including one very deadly species as well. Hopefully, someday, DNA studies of the various species of *Amanita* in Colombia will reveal a variety that is endemic to the Country. There is one curious goldsmithing piece on display at a museum in Cleveland, in the United States of. a pendant featuring a symbolic bird. However, that bird appears to also resembles a similar shape, that of a mushroom, specifically that of *A. muscaria*. So that brings up the question, "Did the Muisca people create this mushroomic gold pectoral? And did they also use *A. muscaria* in cultic-like ceremonies (**Fig. 43**)?"



Fig. 43. Pre-Colombian Muisca Gold Pendant that resembles a bird. With possible *Amanita muscaria* styled mushrooms on top of birds head.

It is JCRM's personal belief that his experience with *A. muscaria* that he harvested in Villa de Leyva was compelling. The fungus was prepared for later consumption by heating the specimen in a peasant's traditional oven. As it dried, it slowly changed color from a bright, brilliant crimson red to orange. And as it changed color, JCRM felt that the magic properties within the mushroom had begun to flow all around him. To fulfill the experience, JCRM rolled up a little ball of the cap and swallowed it whole and complimented his voyage by consuming some fresh milk with that of some ganja. Studies have shown that the magical properties of *A. muscaria* (ibotenic acid and muscimol) will increase after consuming it and apparently, those chemicals increase after passing through the urine. JCRM later reported that it was one of the most rewarding experiences of his life.

DISCUSSION AND SUGGESTIONS

"Did the Muiscas use the mushroom *A. muscaria* as an entheogenic sacrament before the Conquest of Nueva España? The authors believe that the answer to this question should be answered as yes, and so we leave it to time to provide a reason proving that they did not use such a species, or indulge the authors for suggesting such a lousy request?" Ethnobotanist Richard Evans Schultes was the first to suggest that the Zenu (Sinu) and Quimbaya peoples had probably once belonged to an ancient mushroomic cult. Schultes based his conclusions after viewing

many of the mushroomic-goldsmithing pendants and gold pectorals of the Zenu and Quimbaya people displayed at the Museo del Oro in Bogotá (Schultes and Bright, 1985 [1979]).

Besides, we find that the spoken language of the Muiscas, the Tayronas all belong to the same style of the Chibchan families stock. There is a possibility that the Zenu culture taught the goldsmithing techniques of the Man-Bat pendants and pectorals to the Muiscas. Why not also the knowledge around the mushrooms?

Several primitive peoples have reportedly used psilocybian and other fungal species and plants as entheogenic sacraments. Fortunately, it is evident as there is a vast cornucopia of knowledge of such use in primitive societies presented in the academic literature. Duke University anthropologist Weston LaBarre, documents the historical use of entheogens as being at the center of all the origins of religion and religious ideas among primitive societies (see LaBarre, 1970). And eventually over long periods of time, such use became shrouded into complete mysteries of lost civilizations and their religious beginning.

In a Pers. Comm. to JCRM, noted ethnomycologist Carl de Borhegyi provided JCRM with a photograph of a goldsmithing pectoral attributed to the Malagana tribal group. This particular pectoral had recently been discovered in 1992 near Valle del Cauca. It, too, is very suggestive that the Malagana people once belonged to a mushroomic cult

in prehispanic Colombia. Adorning the top of this goldsmithing piece are several golden mushrooms, which are merely symbols of the mushrooms believed to have been worship by the Malagana people (**Fig. 44**).

And here we can view the Man-Bat pectoral on display at the Museo del Oro in Bogotá that JCRM had studied came from the Calima Tribal group. While carefully examining that

particular Calima Man-Bat pectoral (**Fig. 46**), JCRM noticed a mushroom-shaped-form that appeared to be sprouting up from the Calima Man-Bat. Such a coincident led JCRM to believe that the two gold pectoral pieces support his hypothesis that both the Malagana and Calima cultures were products of a mushroom cult separate from that of the Muisca in prehispanic Colombia.



Fig. 44. Ancient Pre-Colombian Malagana gold pectoral.

In a ground-breaking article, a goldsmithing piece referred to as the 'Malagana Trumpet,' depicts several mushroomic floral reliefs similar to those found on the famous statue of *Xochipilli*, the Aztec Prince of Flowers.

The 16th-century Aztec statue of *Xochipilli* was unearthed in the mid-19th century on the side of the volcano Popocatépetl near Tlalmanalco, México. The shallow and intricate floral reliefs on the figure of *Xochipilli* show a pre-Colombian technique of flat and beveled carving, and the sculptured carvings on *Xochipilli's* knees and the pedestal bare the images said to be of the sacred mushrooms the Aztecs knew as "*teonanácatl*." And so, on this 'Malagana Trumpet,' one can see similar floral designed reliefs suggestive of a species of mushroom (Fig. 45)-(Velandia, Galindo & Mateus, 2008).

Also, there is the mysterious archaeological site of San Agustín located south of the Colombian State of Huila. Those people living in that area long ago disappeared without a trace. Even today, it remains a mystery as to what happened to them. And to add to the confusion of who they were, they had left many statues. Some local Native people in the region say that they had suspected that the tribal group who once lived there may have been part of a mushroom cult in prehispanic Colombia. JCRM told of a visiting hippie who had traveled to the zone was convinced that one of the statues in San Agustín was a mushroom shaman holding an entheogenic fungus in his hand. Strange as it seems, when one enters the entrance of the Museo del Oro in Bogotá, there is a San Agustín mushroomic statue that depicts a man with a mushroomic-shaped head who is also holding in one hand, a mushroom. However, some might interpret the fungus as being a grindstone.



Fig. 45. The Malagana Trumpet. Photo: Courtesy of Carl de Borhegyi.

It's curious, but San Agustín is in the Colombian State of Huila located just south of the State of Tolima, and west of Tolima is the State of Valle del Cauca. Cundinamarca and Boyacá States are northeast of Tolima, and the Colombian State of Santander is to the north of Boyacá. The Tayronas lived on the north coast far away from the regions of Bogotá, and those Colombian States that surround San Agustín leave one to speculate

that San Agustín must have been the epicenter for the possible dispersal of mushrooms cults and their followers. It appears that they may have then spread outwards throughout the region into the other Colombian States.

Below, we compare the Colima pectoral in **Figure 46** with that of the Malagana pectoral in **Figure 44** on **Page 138**.



Fig. 46. Calima Man-Bat pendant. Museo del Oro, Bogotá, Colombia.

JCRM believes that a mushroom cult could have entered Colombia from the north, maybe from México to Panama and into Colombia a few thousand years ago. And that could explain how the Man-Bat priests led their followers into Colombia, dispersing their mushroomic cultic way of life throughout the territories of the land. First, the Tayronas, then the Zenu, Quimbayas, Muiscas, and the Tolimas, eventually entered into the Valle del Cauca. Many of those ancient peoples and their cultures ultimately disappeared without a trace into the jungles of the south. And of course, that could also have been a factor that another mushroomic cult had emerged in prehispanic Peru. There in Peru are several penis-shaped statues of which some resemble giant phallic-shaped mushrooms. One cannot discount that the ancestors of the Incas may also have belonged to a mushroom cult in prehispanic Peru that may have dispersed to Colombia.

It would appear that both the Muiscas and the prehispanic Peruvians shared many primitive cultic practices and beliefs. One of the earliest ideas revolved around the myths of worshipping both the lunar and solar myths of their perspective cultures. Both the Muisca people and the Incans belonged to cults that worshipped the sun and moon, a cultic practice that existed in many primitive cultures throughout the world. Could there have once been a war between the Sun god and the Moon goddess? Could it be that the *Amanita* was once related to the sun myths and the psilocybian fungi to the moon myths?

It's that just a supposition? Or should that idea be considered as a speculative thought of fiction? JCRM believes that it is just an idea. But this idea encompasses all the Chibchan language tribal groups in Colombia, including those cults identified by Schultes. And let us not forget that Gastón Guzmán in the early 2000s had discovered a new species of *Psilocybe* in the Colombian pine forest of Antioquia, *Psilocybe bispora*.

Alternative medicine guru Andrew Weil (1980:80) wrote about the association of the mushrooms with that of the moon. In his classic *Marriage of the Sun and Moon*, Weil wrote,

*"Mushrooms have little to do with the sun. Most of them are destroyed by sunlight and are best gathered in early morning before the light of day is too intense. Human societies in all parts of the world associate mushrooms with the moon. This association may not be fanciful. Friends of mine who lived near the villages of Silva in the Colombian State of Cauca told me that the growth of the San Isidro (*Psilocybe cubensis*) mushrooms there were correlated with phases of the moon: Whenever rainfall was sufficient, a new crop would appear each time the moon waxed, disappearing just after the full."*

There is in Bogotá, a trendy modern contemporary indigenous leader who is a member of the Muisca tribe. He has a reputation as being a very trustworthy person and a beautiful human being. This informant once told JCRM that the Muiscas used an ointment (salve) that was made from the *A. muscaria* mushroom. He referred to the

medicine as 'Manita.' And yes, 'Manita' sounds like *Amanita*, but in the Chibchan language, it is a diminutive of "a hand" or implying, 'little hand.' It would seem that it is a living testimony of a member of a Colombian indigenous tribe that may still be using *A. muscaria*. His name must remain a secret to protect his identity from those who might wish to exploit his knowledge of this ointment. And while there is no documented evidence regarding the use of *A. muscaria* by the Muiscas, this informant had refused to speak more about the balm other than what he had told JCRM. Later, he excused himself by saying that he knew nothing more about the balm other than what he had told JCRM. The name 'Manita' is a Spanish name that happens to sound like *Amanita*. Still, it is doubtful that the name 'Manita' was known to the indigenous peoples living in prehispanic Colombia, yet as a Spanish name, it has to be of modern origin.

Furthermore, in the Colombian State of Santander, an informant also told of the use of *A. muscaria* as an insecticide. This informant said that those who used this fungus put the entire cap of the mushroom over a bowl full of water. Then the flies which land to feed on the mushroom cap attempt to fly away after consuming a few nibbles. All of a sudden, they then suddenly fall back into the bowl in a state of unconsciousness where they then drowned in the liquid. This method of using *A. muscaria* in Colombia has to be of European origin, conveyed to the Muisca peasants by European backpackers visiting

Bogotá during the mushroom season. This use of *Amanita* as a common practice in the Old World causes many to question how it came to the Colombian people. In the Old World, *A. muscaria* was known by many languages as 'Fly Killer' ("tue mouche" [French for 'fly-killer']; "mukhomor" [Russian for 'fly-killer']; "fliegenpilz" [German for 'fly-killer']) and those who use it do so to catch and kill flies. However, it must also be considered that even today, that many modern Muisca tribal members are educated at local schools for the indigenous peoples, and those students have internet access to information from all over the world. And that they too can use European ideas about their origins.

The Colombian indigenous tribe Emberá-Chamí has been reported as a tribe that performs a mushroom velada. So it has been documented and left for others to conduct further research. They do have a ceremony using mushrooms, however, the shaman involved who performs the velada uses the coprophilous species, *P. cubensis*, and again, it is doubtful as to the authenticity of the ceremony because *P. cubensis* and various species of the genus *Copelandia* probably did not occur in the New World until after the arrival of the Spanish and the Portugués who imported cattle and horses from Africa, Asia, and Southeast Asia to the Americas. Some of those Muiscas claim to be possessors of the knowledge concerning the existence of ancient mushroom cults in Colombia. Furthermore, there are some tribes whose people claim to use sacred mushrooms. It is

said that the Puinave people (the Renewers of the World) who speak a language isolate of South America use the mushrooms.. Some say it may be related to the language of the Maku. Puinave is spoken only by about 2000 people who live along the Orinoco region between Colombia and Venezuela.

The last observation. The most famous piece in the Museo del Oro collection is the Muisca raft. This Muisca Raft needs no presentation. In it, the inauguration of the Muisca Chief or Zipa is fully and graciously acknowledged (Fig. 47).

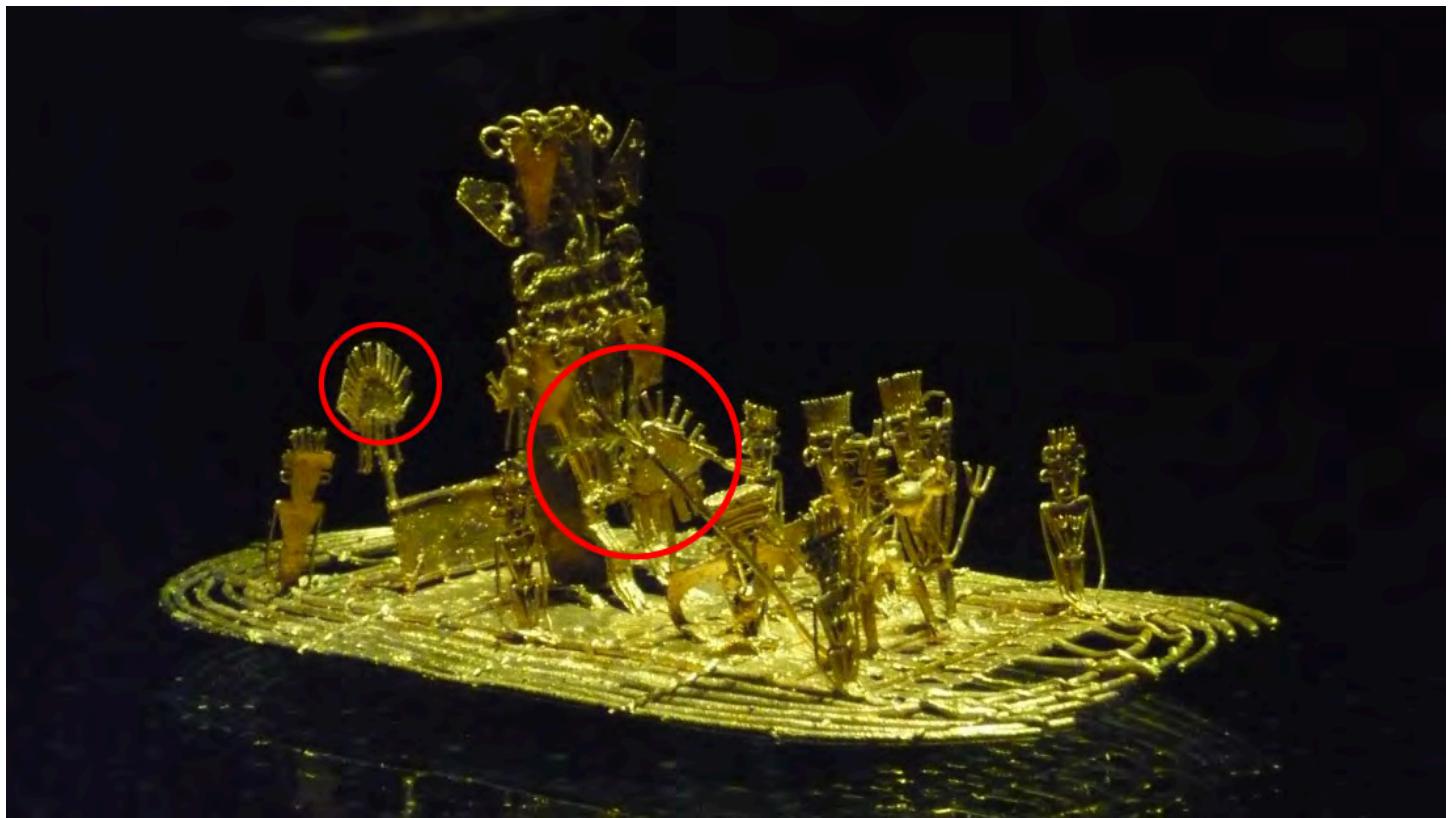


Fig. 47. The Muisca Raft. Museo del Oro. Bogotá, Colombia.

Some say this coronation took place in the sacred Lake of Guatavita. Other versions tell us that the inauguration took place in the Lake of Siecha. It's the origin of the El Dorado legend. These Andean lakes are sacred to the religion of the Muiscas since the time of the conquest in the 1530s. In the proximities of both lakes, *A. muscaria* is very

common. Legend tells us that the Zipa before been crowned covered himself in gold dust to later submerge in the lake on a sacred ceremony. In this ceremony, the future Zipa, as noted above, is covered with gold dust and floated in this raft to the middle of the lake where he performed a sacred marriage

ceremony with the Muisca Snake Goddess and became the new Zipa.

When viewing the Muisca raft, one will notice that the Zipa had aligned himself with his favorite warriors and some members of the priestly caste of the Muiscas and the Chyquys. There are some elements carried in the raft that past researchers had interpreted as banners of some type. JCRM dares to suggest the banners were magic mushrooms. That was the investment of the Zipa, which are the mushroom-shaped forms circled in red. JCRM also indicates that before the new Zipa investment, an entheogenic dinner was offered by the priests to the future Muisca King. JCRM also believes that the mushroom was *A. muscaria*.



Photo: Courtesy of James Arthur. From Europe.



Photo: Courtesy of James Arthur. From Europe.

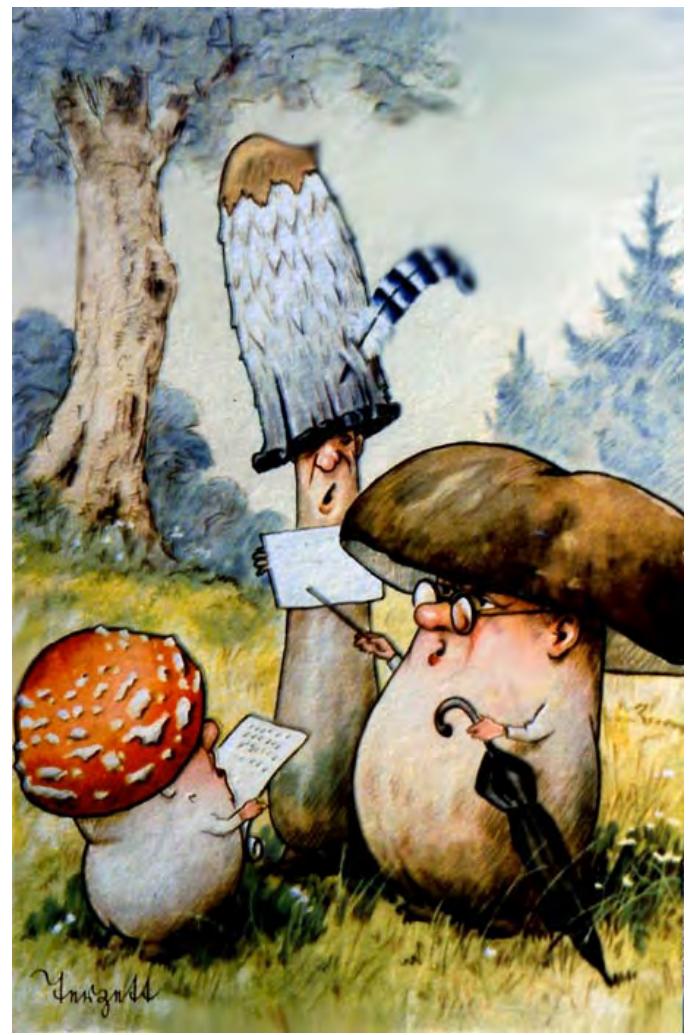


Photo: Courtesy of Tjakko Stijve. Circa: Early 1900s.



Fig. 48. A Quimbaya or Yotoco Styled Gold Pectoral. Photo: Courtesy of Carl de Borhegyi.

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Wasson, R. Gordon, et al. *The Road to Eleusis: Unveiling the Secret of the Mysteries*. New York: Harcourt, 1978.

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Fig. 49. *Amanita muscaria*. Painting by Troll-king. A gift created for John W. Allen by Troll-King from one of John's *Amanita* Photographs.



Image: Graphic designed X-Mas card by John W. Allen.

Footnotes on Schultes and Bright (1979); and Guzmán and Yarela (1978).

(1): ENGLISH: Two Paragraphs:

(a): Although the collection and study of fungi in Colombia is in the preliminary stage, species containing psilocybin have been found. I know that the Psilocybe species are found in various places in the world. Field studies conducted by Dr. Gastón Guzmán in 1964 and 1971 have indicated that in Colombia there are hallucinogenic species of Psilocybe (Guzmán and Yarela, 1978). The places where they have been located are scattered throughout the national territory and range from the warm sheets until the high moors.

(b): The studies we have done on the pectorals of Darien and the pectorals related to Darien have strengthened our hypothesis of that the magical-religious

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function of fungi was widespread in the aboriginal cultures of Mexico and Central America, as well as along the Andes to Peru.

(2): ENGLISH:

(a): Guzmán states in a letter: "I agree with you that South American indigenous people used the hallucinogenic species of *Psilocybe*. I found thirty species in South America. I think there are many more, but we need more research. I think that the natives of the Atlantic zone, and not only those who inhabited the Andean region, used hallucinogenic mushrooms. The field work recently done by the Dr. Kenneth Dumont resulted in the finding in Colombia of other species of *Psilocybe*, some of which contain psilocybin (Dumont, personal correspondence).

(3): ENGLISH:

(a): The studies we have done on the pectorals of Darien and the pectorals related to Darien have strengthened our hypothesis of that the magical-religious function of fungi was widespread in the aboriginal cultures of Mexico and Central America, as well as along the Andes to Peru.

DUMONT, Kenneth. Pers. Communication. No Date.

GUZMÁN, G . Y L. VARELA, 1978. "Hongos de Colombia III." en *Caldasía* 12:309-338.

Guzmán and Varela (1978) noted the presence of *P. yungensis* from Bolivia, and later from Mexico and also mentioned the occurrence in Martinique by Pegler (1983) .

PULIDO, M. M., 1983. Estudios en Agaricales Colombianos (Los hongos de Colombia IX). [*Univ. Nac. de Colombia, Inst. Ciencias Nat., Museo Hist. Nar., Bibl.*]. *J. Triana*, numero. Bogotá, Colombia..

Guzmán notes in Pulido (1983) The widespread occurrence of *Copelandia cyanescens* from the center of Colombia to Toledo in the Paraná State of Brazil (**Guzmán y Varela** 1978).

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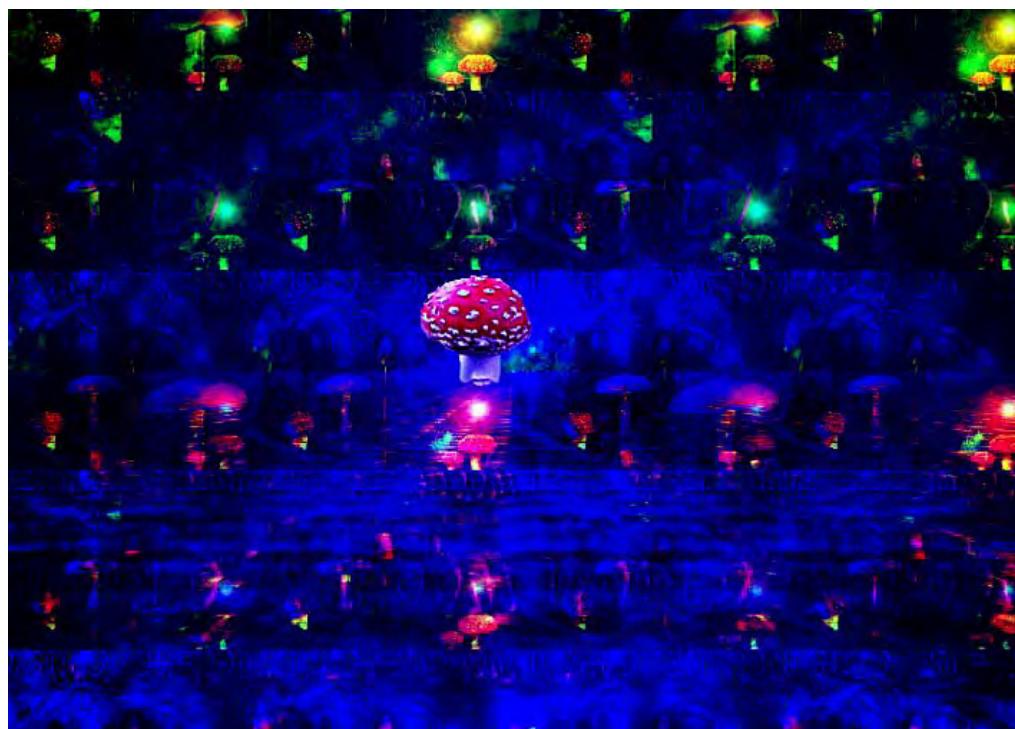


Fig. 50. Montage with real *Amanita muscaria*. Graphic Art created by John W. Allen.



Fig. 51. Montage with real *Amanita muscaria* and Historical Site, Muang Boran, Thailand.
Graphic Art created by John W. Allen.

Final Note with References Cited in Text

The use of psilocybian fungi in cultures outside of Mesoamerica cannot be conclusively inferred from the ethnographic evidence although; evidence indicates possible use in Siberia and Africa. However, an eighteenth century report from a Jesuit priest who lived among the Yurimagua Indians of the Peruvian Amazon region (Heim & Wasson 1958; Heim 1963; Schultes 1966, 1976; Pollock 1977-1978), wrote that he observed Indians who drank a potion brewed from an unidentified “tree-fungus” which had been mixed with a red oil. This drink allegedly caused inebriation. The identity of the mushroom in question remains a mystery to this day, but could it possibly have been a *Psilocybe*; mayhap *Psilocybe yungensis* Heim, a wood-debris fungus known from this region of the Amazon (Schultes & Hofmann, 1980; Guzmán, 1983), or possibly *Gymnopilus purpuratus* or *Gymnopilus subpurpuratus* (Gartz, 1993, 1996), the latter two which are now known to occur in Mesoamerica, as well as Central and South America (for further info: see author’s page for Juan Camilo Rodriguez Martinez).

APPENDIX

Regarding the True Identity of the Tree Fungus that Richard Evans Schultes wrote about in 1969

“Dear John, my sincere apologies for the belated reply. Only now am I able to think about the issues at hand that you wrote about. The fungus reference for what really is believed to be a *Gymnopilus* growing on trees in Peru I believe is in a reference by Jochen Gartz” Magic Mushrooms around the World, p. 53.” (Pers. Comm. Peter Trutmann, 4 March 2020).

“Intoxicating Potions of the Yurimagua Indians

Ethnomycologist Dr. Jochen Gartz of the University of Leipzig, Germany was the first to report on the discovery of psilocybin in a South American species of *Gymnopilus*.

Jesuits of the 17th and early 18th centuries who had travelled to the western Amazon (Peru) reported that the Yurimagua Indians habitually prepared a potently intoxicating potion derived from a tree-dwelling mushroom. The mushrooms appeared on fallen trees as a kind of reddish growth with a spicy taste. The potion was said to be so potent that nobody who swallowed three mouthfuls of the brew was able to resist its effects.

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The mushroom was considered to be *Psilocybe yungensis* Singer & Smith. However, since *Gymnopilus* species are reddish in color (see description of *Gymnopilus purpuratus*, above) and tend to colonize dense tree trunks, those strange tree-dwelling mushrooms were most likely a *Gymnopilus* species. The *Psilocybe* species, after all, grow almost exclusively on wood sprigs and tree bark debris. On only one exceptional occasion did we discover a specimen of *Psilocybe bohemica* growing on a thoroughly rotted, wet tree trunk (see p. 31, top right). Most likely, the reddish colored tree-dwelling species was closely related to *Gymnopilus purpuratus*. The discovery of psilocybin in a mushroom of the *Gymnopilus* species marked the first time this substance had ever been found in a member of the family Cortinariaceae."

The *Inocybe* species who were found to contain psilocybin later on, are also members of this family. Since the alkaloid had previously been found in *Psilocybe*, *Panaeolus* and *Conocybe* species - which are not closely related.

I hope this is of use. Keep up the fascinating work John! And take care of your eyes. You are a wealth of knowledge. Here in Peru I just published a book called 'the sacred language of the stars' to read messages on ancient American art with mushrooms since most archaeologists here still do not believe the structures growing out of heads are mushrooms.

I will reflect on other parts of your writing. And if anything sensible comes to mind I shall write more.

Be well,

Peter

FIN.

Allen's Compendium of the Neurotropic Fungi

Part I:

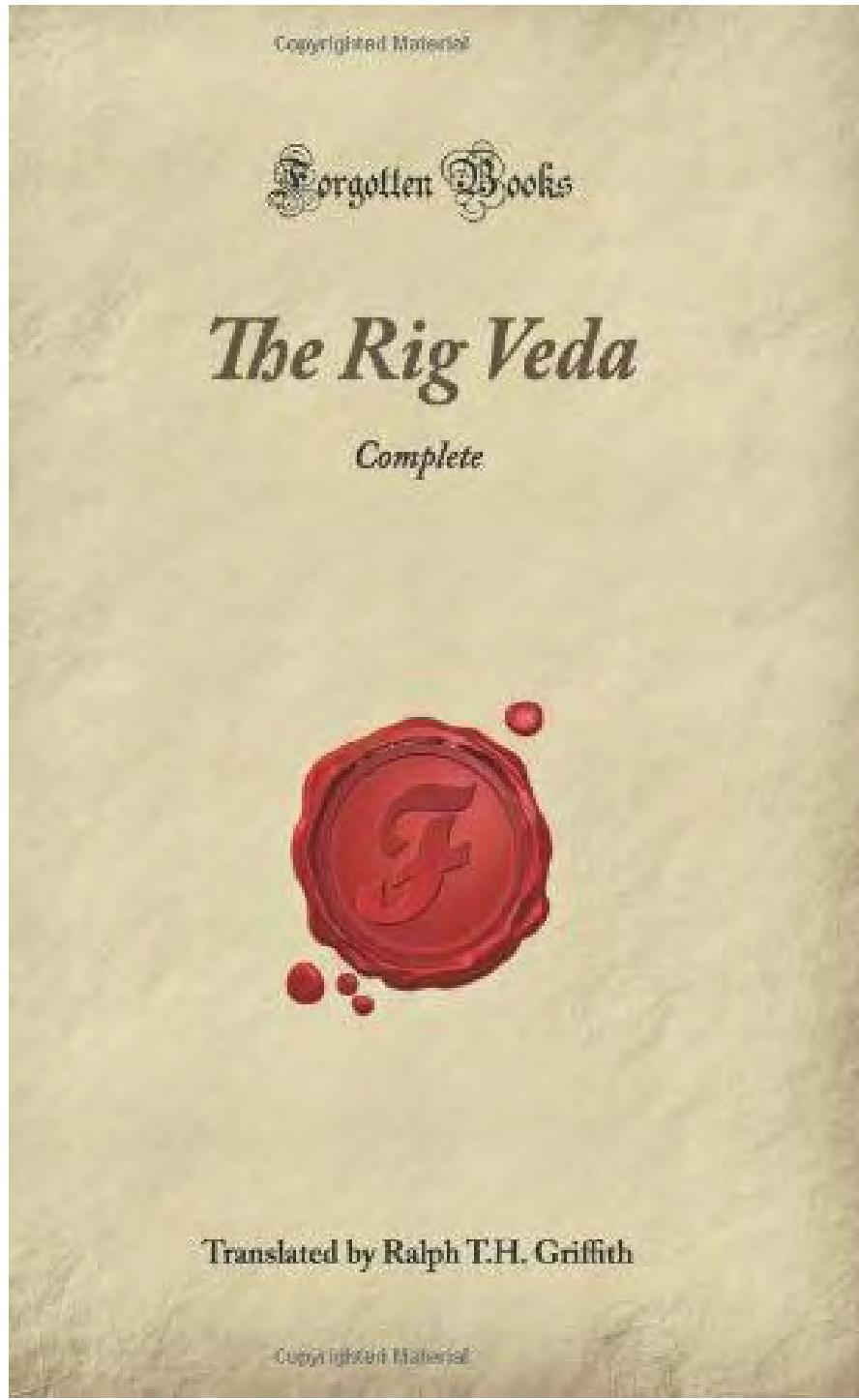
Soma, *Amanita muscaria*, and Related Species



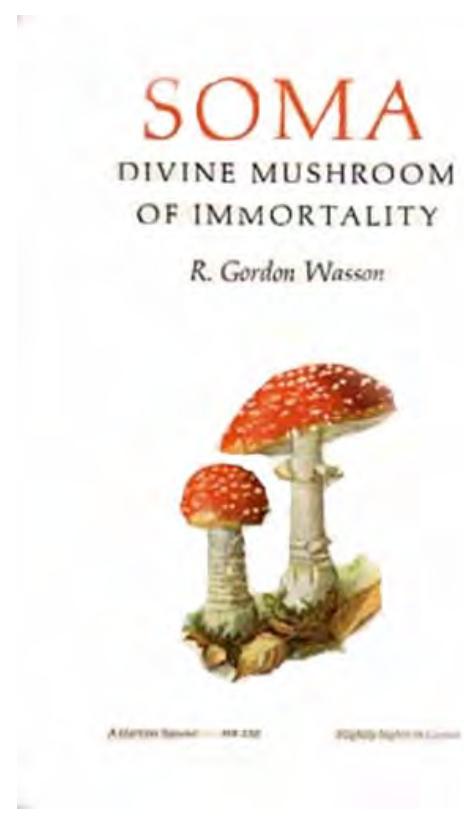
An *Amanita* Fractal created in KPTS 3

Soma: Divine Mushroom of Immortality

A SHORT BIBLIOGRAPHY ON THE FLY AGARIC AND RELATED SUBJECTS



There are, in the Vedic scriptures, numerous Hymns devoted to praising the virtues of an unidentified entheogenic drug plant referred to as Soma.



Throughout history, only an elite few scholars possessed the arcane knowledge of the history of *Amanita muscaria* (Fr.) Hooker, also referred to as 'SOMA.' Two such researchers include the late ethnomycologist, R. Gordon Wasson and Sanskrit scholar Wendy Doniger O'Flaherty. Both believed that 'SOMA, an ancient mysterious drug plant elixir, was made from *Amanita muscaria*.

Amanita muscaria is also known as and/or referred to as the 'fly agaric' mushroom or the 'fly killer' mushroom. Unlike the psilocybine containing mushrooms, *Amanita muscaria* does not contain the tryptamine alkaloids psilocine and/or psilocybine. However, *Amanita muscaria* and several related species contain several chemicals which cause inebriations and intoxications when eaten. Active ingredients found in these mushrooms include: ibotenic acid, muscimol, and the sometimes toxic chemical known as muscarine.

The earliest reference confirming the existence of this magical entheogenic plant can be found in the ninth and tenth mandala of the *Rig Veda*, the most holy and oldest of the ancient Vedic hymns. More than two thousand years ago, its use faded into the pages of history and completely disappeared. Today, the knowledge of the cultural importance of Soma is now reemerging into the 21st century of entheogenism.

Although this bibliography is far from complete, it should enable those who wish access to this information, a better understanding of the nature of this fungi, its chemistry and pharmacological actions, and its relationship with the human element.

The Soma Compendium is a bibliography of the known literature on *Amanita muscaria* and related subject matter that features: 356 references, 189 annotations and more than 695 cross-references, of which more than 75 additional referenced links have been posted in many of these author-date citations featured throughout this bibliography. Also included are numerous related photographs of species, literature (book and magazine covers), including many abstracts describing the contents featured herein.

The Cross Reference Index Subject Matter

1. Accidental Ingestions.
2. Amanita Species.
3. Anthropological Aspects.
4. Biography.
5. Book Reviews.
6. Chemical Aspects.
7. Clinical Studies.
8. Contemporary Research.
9. Ethnomycological Studies.
10. Interviews.
11. Modern Traditional Use.
12. Mushroom Poisoning.
13. Personal Experience.
14. Pharmacological Aspects.
15. Recreational Use.
16. Shamanism.
17. Santa Claus.
18. Urine Drinking.
19. Wasson and Soma.



Soma: A Cross Reference Index

ACCIDENTAL INGESTIONS:

Amanita muscaria: [Ott](#), 1976; [Ott](#), 1993; [Roch & Mach](#), 1960; [Weil, 1980](#).

Amanita pantherina: [Bosman](#), 1965; [Gelfand & Harris](#), 1982; [Gilbertson](#), 1966; [Leonhart](#), 1949; [Samorini](#), 1994; [Weil](#), 1980.

Amanita regalis: [Elonen, Tarssanen, & Häkkinen](#); [Stijve](#), 2000.



What one might see under the influence of *Amanita muscaria* Hooker.

AMANITA SPECIES:

Amanita cothurnata ([Ott](#), 1993).

Amanita gemmata ([Ott](#), 1993).

Amanita mira ([Bandoni, Bandoni and Flegel](#), 2002; [Sanmee et al.](#), 2008.)

Amanita muscaria ([Guzmán](#), 2001; [Heim](#), 1963; [Samorini](#), 1998b; [Schultes & Hofmann](#), 1973; [Schultes & Hofmann](#), 1979;

[Ott](#), 1993; [Stafford](#), 2003; [Weil](#), 1980).

Amanita pantherina ([Heim](#), 1963; [Schultes & Hofmann](#), 1973; [Schultes & Hofmann](#), 1979; [Ott](#), 1993; [Weil](#), 1980).

Amanita regalis ([Elonen, Tarssanen, and Härkönen](#). 1979; [Ott](#), 1993; [Stijve](#), 2000).

Amanita strobiliformis ([Ott](#), 1993).



Amanita gemmata. Green Lake near Aurora. Seattle, Washington.

ANTHROPOLOGY:

Cultural: [Arthur](#), 2000; [Bauer](#), 1995; [Bauer, Klapp & Rosenbohm](#), 2000; [Bogoras \(Bogoraz\)](#), 1910; [Brekman & Sam](#), 1967; [Clark](#), 2019; [Dannaway](#), 2009; [Dobkin De Rios](#), 1976; [Dobkin De Rios](#), 1984; [De Vries](#), 2000; [Doniger O'Flaherty](#), 1968; [Donner](#), 1926; [Donner](#), 1933; [Donner](#), 1946; [Dunin-Gorkavitch](#), 1904; [Enderli](#), 1903; [Eugster](#), 1967a; [Furst](#), 1986; [Gosso & Camilla](#), 2007; [Hajicek-Dobberstein](#), 1995; [Hoffman & Hoffman](#), 2001; [Hoffman, Ruck & Staples](#), 2001; [Hoffman, Ruck & Staples](#), 2002; [Irvin & Jutajit](#), 2005; [Jadrintsev](#), 1886; [Jochelson](#), 1905; [Jochelson](#), 1961; [Karjalainen](#), 1927; [Kopec](#), 1837;

ANTHROPOLOGY: (Continued):

Kramrisch, 1976 [Krasheninnikov](#), 1755; [Langsdorf](#), 1809; [Lansdell](#), 1882; [Maillart-Garg & Winkelman](#), 2019; [Maybry](#), 2000; [Maydel](#), 1893; [Ogloblin](#), 1891; [Ott](#), 1993; [Ott](#), 1998; [Riedlinger](#), 1993; [Rippon](#), 1982; [Rosenbohm](#), 1991; [Saar](#), 1991a; [Saar](#), 1991b; [Samorini](#), 1996; [Samorini](#), 1998a; [Samorini](#), 1998b; [Sarychev](#), 1903; [Toro](#), 2009; [Wasson](#), 1960; [Wasson](#), 1968; [Wasson](#), 1970b; [Wasson](#), 1971; [Wasson](#), 1972b; [Wasson](#), 1976; [Wasson](#), 1979b; [Wasson](#), 2002a; [Wasson & O'Flaherty](#), 1968; [Wilson](#), 1995; [Wilson](#), 1999.

TRIBAL GROUPS:

Chukchee (Chukchi): [Bogoras](#), 1910; [Dittmar](#), 1900; [Enderli](#), 1903; [Maydell](#), 1893; [Sarychev](#), 1905-1915; [Siimets](#), 2006.,

Early Egyptians: [Arthur](#), 2000; [Mabry](#), 2000.

Finns: [Schultes](#), 1976

Greek: [Samorini & Camilla](#), 1995[1994]; [Wohberg](#), 1990.

Europe: [Toro](#), 2009; [Gosso & Camilla](#), 2007.

India: [Maillart-Garg & Winkelman](#), 2019.

Irish: [Wilson](#), 1995; [Wilson](#), 1999.

Irtysh-Ostyak: [Patkanov](#), 1897.

Italian: [Samorini](#), 1996.

Japanese: [Dannaway](#), 2009.

Kamchandal: [Dittmar](#), 1900; [Erman](#), 1833-1848; [Jochelson](#), 1961; [Kopce](#), 1837; [Krasheninikov](#), 1755; [Langsdorf](#), 1809; [Lesseps](#), 1790; [Ogloblin](#), 1891; [Samorini](#), 1998b.

Koryak: [Dittmann](#), 1900; [Enderli](#), 1903; [Erman](#), 1933-1948; [Jochelson](#), 1905-1961; [Kennen](#), 1871; [Krashenninikov](#), 1755; [Langsdell](#), 1882; [Maydell](#), 1893; [Sijunin](#), 1900; [Steller](#), 1774; [Strahlenberg](#), 1736; [Vanderlip](#), 1903; [Wasson & O'Flaherty](#), 1968.

Lapps: [Itkonen](#), 1946; [Schultes](#), 1976.

Northern Asians: [Rosenbohm](#), 1991.

Norse: [Hajicek-Dobberstein](#), 1995.

Ob-Ugrian: [Dunin-Gorkavich](#), 1904.

Persians: [Piper](#), 2003.

Samoyed: [Donner](#), 1926; [Lehtisalo](#), 1924.

Samoyed-Ostyak: [Dannaway](#), 2009.

Siberians: [Andrews](#), (DATE); [Dobkin De Rios](#), 1976; [Dobkin De Rios](#), 1984; [Donner](#), 1926; [Donner](#), 1946; [Heizer](#), 1944; [Jadrintsev](#), 1886; [Jochelson](#), 1961; [Karjalainen](#), 1927; [Kennen](#), 1871; [Maydell](#), 1893; [Saar](#), 1991b; [Strahlenberg](#), 1736.

Yakuts (Yokoutes): [Gershevitch](#), 1974.

Yenisei-Ostyak: [Donner](#), 1933.

Yukagir: [Steller](#), 1774.

Yurak: [Lehtisalo](#), 1924.

Ugrian: [Itkonen](#), 1946; [Karjalainen](#), 1927.

Urlan: [Karjalainen](#), 1927.

BIOGRAPHY:

R. Gordon Wasson ([Jürgenson](#), 2000).

BOOK REVIEWS:

Soma: Divine Mushroom of Immortality:

[Becker](#), 1969; [Brough](#), 1971; [Ingalls](#), 1971; [Kramrisch](#), 1972; [Kuiper](#), 1970; [La Barre](#), 1970; [La Barre](#), 1980; [Samorini](#), 1995; [Schultes](#), 1971.

The Sacred Mushroom ([Smythies Jr.](#), 1960).

CHEMICAL ASPECTS:

The chemical properties listed below have been detected and/or isolated from the following species: *Amanita muscaria*, *Amanita pantherina*, *Amanita regalis*, *Amanita corthurnata*, *Amanita gemmata*, and *Amanita strobiliformis*.

(-)-r-4-Hydroxy-2-pyrrolidon-(2): [Matsumoto et al.](#), 1969.

2(3H)-Oxazolone: [Goth et al.](#), 1967.

3-Bromoisoxazole: [Cabbidu & Solinas](#), 1969.

3-deoxyibotenic acid: [Sirakawa et al.](#), 1966.

3-Hydroxyisoxazoles: [Goth et al.](#), 1967; [Krogsgaard-Larsen, Christiansen & Hjeds](#), 1972.

[3C]Muscimol: [Snodgrass](#), 1978.

[3H]-Muscimol: [De Feudis](#), 1980; [Schaeffer](#), 1980.

4-aminoalkyl-5-methyl-3-isoxazoles: [Hjeds & Krogsgaard-Larsen](#), 1976.

5-alkoxyisoxazoles: [Nishikada](#), 1969

5-aminomethyl-3-isothiazolol (Thiomuscimol): [Lykkeberg & Krogsgaard-Larsen](#), 1976.

[14]Muscimol: [Matthews et al.](#), 1981.

Alkyl-1-azirine-3-carboxylates: [Nishikada](#), 1969.

D,L-ibotenic acid: [Nakamura](#), 1971.

D,L-muscarine: [Eugster et al.](#), 1958.

D,L-threo-a-amino-3)x0-5-isoxazolidineacetic acid: [Iwasaki et al.](#), 1965b.

D,L-tricholomic acid: [Iwasaki et al.](#), 1965a.

Agarin: (See Pantherine below) [Bowden, Crank & Rose](#), 1968; [Gagneux et al.](#), 1965a.

Amavadin: [Bayer & Kneifel](#), 1972; [Kneifel & Bayer](#), 1986.

GABA: [Arnt et al.](#), 1979; [Biggio et al.](#), 1977; [Brem, Hjeds & Krogsgaard-Larsen](#), 1972; [Chan-Palay](#), 1978a; [Chan-Palay](#), 1978b; [Constanti & Nistri](#), 1981; [Johnson](#), 1971; [Kier & Truit](#), 1970; [Krogsgaard-Larsen & Christiansen](#), 1976; [Krogsgaard-Larsen & Johnson](#), 1975; [Snodgrass](#), 1978; [Waddington & Cross](#), 1979.

Ibotenic acid: [Borthwick & Stewart](#), 1976; [Bowden et al.](#), 1965; [Curtis, Lodge & McLennan](#), 1979; [Eugster](#), 1967b; [Eugster](#), 1969; [Eugster](#), 1970; [Eugster, Muller & Good](#), 1965; [Eugster et al.](#), 1958; [Gagneux et al.](#), 1965b; [Gagneux](#), 1967; [Gennaro et al.](#), 1997; [Good et al.](#), 1965; [Johnson et al.](#), 1968; [Kishida et al.](#), 1966; [König-Bersin et al.](#), 1970; [Lund](#), 1979; [Mochtar & Geerkin](#), 1979; [Nakamura](#), 1971; [Ott](#), 1980; [Ott](#), 1993; [Repke, Dale & Kish](#), 1978; [Rippon](#), 1982; [Sirakawa et al.](#), 1966; [Stijve](#), 1982; [Stijve](#), 1995; [Takemoto](#), 1964a; [Takemoto](#), 1964b; [Takemoto, Nakajima & Sakuma](#), 1964a; [Walker, Woodruff & Kerkui](#), 1971; [Wasser](#), 1970; [Wasser & Bersin](#), 1970.

Isoxozole: [Benedict et al/Krogsgaard-Larsen & Johnson](#), 1975.

Isoxazolin-5-ones: [Krogsgaard-Larsen, Christiansen & Hjeds](#), 1972.

L-Muscarine: [Eugster et al.](#), 1958.

Muscarine: [Bollinger & Eugster](#), 1971; [Bowden & Mosey](#), 1958; [Brown et al.](#), 1962; [Catalfomo & Eugster](#), 1970; [Eugster](#), 1956; [Eugster](#), 1959; [Eugster](#), 1960; [Eugster & Müller](#), 1959; [Eugster & Schleusener](#), 1969; [Eugster & Wasser](#), 1954; [Fraser](#), 1957; [Givens & Radermacher](#), 1974; [Mochtar & Geerkin](#), 1979; [Rippon](#), 1982; [Stijve](#), 1982; [Stijve](#), 1995; [Waser](#), 1958; [Waser](#), 1960; [Waser](#), 1961a; [Waser](#), 1961b; [Wilkinson](#), 1961.

Muscarine in Inocybe Species: [Gershevitch](#), 1974; [Good et al.](#), 1965.

Muscarazone: [Eugster, Müller & Good](#), 1965; [Fritz et al.](#), 1965.

Muscarone: [Belleau & Puranen](#), 1963; [Good, Müller & Eugster](#), 1965; [Waser](#), 1961.

Muscazone: [Ott](#), 1993; [Rippon](#), 1982.

Muscimol: [Arnt et al.](#), 1979; [Baraldi et al.](#), 1979; [Bersin](#), 1969; [Biggio et al.](#), 1977; [Bowden, Crank & Rose](#), 1968; [Brem et al.](#), 1972; [Camazine](#), 1983; [Constanti & Nistri](#), 1981; [Cunningham](#), 1975; [De Feudis](#), 1980; [De Feudis et al.](#), 1980; [Gennaro et al.](#), 1997; [Good, Müller & Eugster](#), 1965; [Gundlach & Beart](#), 1980; [Hjeds & Krogsgaard-Larsen](#), 1976; [Jobert et al.](#), 1979; [Johnson](#), 1971; [Johnson, Kennedy & Lodge](#), 1978; [Johnson et al.](#), 1968; [Johnson et al.](#), 1978; [Kier & Truit](#), 1970; [König-Bersin et al.](#), 1970; [König-Bersin et al.](#), 1976; [Krogsgaard-Larsen & Christiansen](#), 1976; [Kulcsar et al.](#), 1977; [Loev, Wilson & Goodwin](#), 1970; [Lund](#), 1979; [Maggi & Enna](#), 1979; [Matsui & Kamioka](#), 1979; [Matthews et al.](#), 1981; [Mennon & Vivonia](#), 1981; [Müller, Gunter & Eugster](#), 1965; [Olpe & Koella](#), 1978; [Ott](#), 1993; [Ott, Wheaton & Chilton](#),

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CHEMICAL ASPECTS (Continued):

1975; [Repke, Dale & Kish](#), 1978; [Schaffer](#), 1980; [Scotti de Corolis et al.](#), 1969; [Snodgrass](#), 1978; [Stijve](#), 1982; [Stijve](#), 1995; [Walker, Woodruff & Kerkui](#), 1971; [Wang et al.](#), 1979; [Wasser & Bersin](#), 1970; [Worms, Depcortere & Lloyd](#), 1979.

Pantherine =muscimol - (Agarin): [Bowden, Crank & Rose](#), 1968; [Gagneux et al.](#), 1965a.

Selenium: [Stijve](#), 2000.

Stizolobic and Stizolobinic acid: [Chilton et al.](#), 1974.

Theomuscimol: [Lykkeberg & Krogsgaard-Larsen](#), 1976.

Vanadium: [Stijve](#), 2000.

CLINICAL STUDIES:

In Animals:

[Baraldi, Grandison & Guidotti](#), 1979; [Biggio et al.](#), 1977; [Chan-Palay](#), 1978; [Constanti & Nistri](#), 1981; [De Feudis et al.](#), 1980; [Johnson](#), 1971; [Johnson, Kennedy & Lodge](#), 1978; [Krogsgaard-Larsen & Johnson](#), 1975; [Kulcsar et al.](#), 1977; [Lea & Usherwood](#), 1973; [Maggi & Enna](#), 1979; [Matsui & Kamioka](#), 1979; [Matthews et al.](#), 1981; [Mennon & Geerken](#), 1979; [Olpe & Koella](#), 1978; [Ott, Wheaton & Chilton](#), 1975; [Schaeffer](#), 1980; [Wang et al.](#), 1979; [Walker, Woodruff & Kerkui](#), 1971; [Weil](#), 1980.

In Humans:

[McDonald](#), 1978; [Theobald et al.](#), 1963; [Wasser & Bersin](#), 1970.



Hartmut Geerken under the influence of *Amanita muscaria* in a European controlled environmental Study. Photo: Courtesy of Wolfgang Bauer.

CONTEMPORARY RESEARCH:

[Arthur](#), 2000; [Allegro](#), 1970; [Allegro](#), 1970a; [Allegro](#), 1971; [Bauer](#), 1991b; [Bauer](#), 1992; [Bauer](#), 1995; [Calvetti](#), 1986; [Clark](#), 2019; [De Korne](#), 1994; [Doniger O'Flaherty](#), 1982; [Festi & Bianchi](#), 1992; [Geerken, 1992](#); [Guzmán](#), 2001; [Hajicek-Dobberstein](#), 1995; [Heinrich](#), 1992; [Heinrich](#), 2002a; [Heinrich](#), 2002b; [Heinrich & Hoffman](#), 2001; [Hoffman](#), 2002; [Hoffman & Hoffman](#), 2001; [Hoffman & Ruck](#), 2002b; [Hoffman, Ruck & Staples](#), 2001; [Hoffman, Ruck & Staples](#), 2002; [Jürgenson](#), 2000; [Kiefer](#), 1988; [Klapp](#), 1991; [Kramrisch et al.](#), 1986; [Leonhart](#), 1992[1940]; [McDonald](#), 1978; [Ott](#), 1975; [Ott](#), 1976; [Ott](#), 1977; [Ott](#), 1993; [Ott](#), 1998; [Pettis](#), 1991; [Piper](#), 2002; [Riedlinger](#), 1993; [Römer](#), 1992; [Rosenbohm](#), 1991;

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[Saar](#), 1991a; [Saar](#), 1991b; [Samorini](#), 1994; [Samorini](#), 1998b; [Stafford](#), 2003; [Stijve](#), 1995; [Stijve](#), 2000; [Toro](#), 2009; [Waldschmidt](#), 1992; [Wasson](#), 2002a; [Wasson](#), 2002b; [Wattiaux](#), 2002; [Wilson](#), 1995; [Wilson](#), 1999; [Wohberg](#), 1990.

ETHNOMYCOLOGICAL STUDIES:

[Andrews](#), (no Date available?); [Arthur](#), 2000; [Bauer & Klapp](#), 2012; [Bauer, Klapp & Rosenbohm](#), 2000; [Brekman & Sam](#), 1967; [Clark](#), 2019; [De Korne](#), 1994; [Dobkin De Rios](#), 1976; [Dobkin De Rios](#), 1984; [De Vries](#), 2000; [Dannaway](#), [Doniger O'Flaherty](#), 1968; [Doniger O'Flaherty](#), 1982; [Donner](#), 1926; [Donner](#), 1933; [Donner](#), 1946; [Dunin-Gorkavich](#), 1904; [Efron](#), 1967; [Enderli](#), 1903; [Erman](#), 1933-1948; [Eugster](#), 1967a; [Fericgla](#), 1992; [Festi](#), 1985; [Festi & Bianchi](#), 1992; [Furst](#), 1976; [Furst](#), 1986; [Georgi](#), 1780; [Gershevitch](#), 1974; [Gimbutas](#), 1974; [Gosso & Camilla](#), 2007; [Guzmán](#), 2001; [Hajicek-Dobberstein](#), 1995; [Heim](#), 1966; [Heinrich](#), 1992; [Heinrich](#), 2002a; [Heinrich](#), 2002b; [Heizer](#), 1944; [Hoffman](#), 2002; [Hoffman & Hoffman](#), 2001; [Hoffman & Ruck](#), 2002B; [Hoffman, Ruck & Staples](#), 2001; [Hoffman, Ruck & Staples](#), 2002; [Irvin & Jutajit](#), 2005; [Itkonen](#), 1946; [Jadrintsev](#), 1886; [Jochelson](#), 1905; [Jochelson](#), 1961; [Jürgenson](#), 2000; [Kamienski](#), 1874; [Karjalainen](#), 1927; [Keewaydinoquay](#), 1978; [Keewaydinoquay](#), 1979; [Kennen](#), 1871; [Kiefer](#), 1988; [Klapp](#), 1991; [Kopec](#), 1837; [Kramrisch](#), 1976; [Kramrisch et al.](#), 1986; [Krashennikov](#), 1755; [L'allemand](#), 1626; [Langsdorf](#), 1809; [Lansdell](#), 1882; [Lehtisalo](#), 1924; [Lesseps](#), 1790; [Lowy](#), 1974; [Maillart-Garg & Winkelmann](#), 2019. [Maybry](#), 2000; [Maydell](#), 1893; [Navet](#), 1988; [Navet](#), 1993; [Ogloblin](#), 1891; [Ott](#), 1976; [Ott](#), 1977; [Ott](#), 1978; [Ott](#), 1993; [Ott](#), 1998; [Patkanov](#), 1897; [Pettis](#), 1991; [Piper](#), 2002; [Puhrich](#), 1959a; [Puhrich](#), 1959b; [Riedlinger](#), 1993; [Rosenbohm](#), 1991; [Saar](#), 1991a; [Saar](#), 1991b; [Samorini](#), 1996; [Samorini](#), 1998b; [Samorini & Camilla](#), 1995 [1994]; [Sarychev](#), 1905-1915; [Schleiffer](#), 1979; [Schultes](#), 1976; [Schultes & Hofmann](#), 1979; [Sijunin](#), 1900; [Stafford](#), 1977; [Steller](#), 1774; [Strahlenberg](#), 1736; [Toro](#), 2009; [Vanderlip](#), 1903; [Wasson](#), 1960; [Wasson](#), 1964; [Wasson](#), 1967; [Wasson](#), 1968; [Wasson](#), 1970a; [Wasson](#), 1970b; [Wasson](#), 1971; [Wasson](#), 1972a; [Wasson](#), 1972b; [Wasson](#), 1976; [Wasson](#), 1979a; [Wasson](#), 1979b; [Wasson & Doniger O'Flaherty](#), 1968; [Wasson et al.](#), 1980; [Wattiaux](#), 2002; [Wilson](#), 1995; [Wilson](#), 1999; [Wohberg](#), 1990.

Early Soma Studies: [Doniger O'Flaherty](#), 1968; [Doniger O'Flaherty](#), 1982; [Unsigned](#), A; [Unsigned](#), B; [Wasson](#), 1968.

Historical Studies (1600-1900): [Erman](#), 1833-1848; [Georgi](#), 1780; [Heinrich](#), 2002; [Jadrintsev](#), 1886; [Kamienski](#), 1874; [Kennen](#), 1871; [Kopec](#), 1837; [Krashennikov](#), 1755; [L'allemand](#), 1626; [Lansdell](#), 1882; [Lesseps](#), 1790; [Maydell](#), 1893; [Maillart-Garg & Winkelmann](#), 2019; [Ogloblin](#), 1891; [Patkanov](#), 1897; [Samorini](#), 1996; [Steller](#), 1774; [Strahlenberg](#), 1736; [Toro](#), 2009; [Wasson](#), 1968; [Wilson](#), 1995.

INTERVIEWS:

[Lytle](#), 2003.

MODERN TRADITIONAL USE:

North America: [Guzmán](#), 2001; [Heinrich](#), 2002b; [Keewaydinoquay](#), 1978; [Keewaydinoquay](#), 1979; [Navet](#), 1988; [Navet](#), 1993; [Wasson](#), 1979a; [Wasson](#), 2002; [Wasson et al.](#), 1980.

Siberia: [Andrews](#), (DATE); [Bergman & Sten](#), 1926; [Bogoras](#), 1910; [Brekman & Sam](#), 1967; [Dobkin De Rios](#), 1976; [Dobkin De Rios](#), 1984; [Donner](#), 1926; [Donner](#), 1933; [Donner](#), 1946; [Dunin-Gorkavich](#), 1904; [Efron](#), 1967; [Enderli](#), 1903; [Geerkin](#), 1922; [Heizer](#), 1944; [Itkonen](#), 1946; [Jochelson](#), 1905; [Jochelson](#), 1961; [Karjalainen](#), 1927; [Lehtisalo](#), 1924; [Saar](#), 1991a; [Saar](#), 1991b; [Samorini](#), 1998b; [Sarychev](#), 1905-1915; [Sijunin](#), 1900; [Stafford](#), 2003; [Vanderlip](#), 1903.

MUSHROOM POISONING:

ACCIDENTAL:

[Ammirati, Traquair & Horgen](#), 1980; [Bosman et al.](#), 1965; [Chilton & Ott](#), 1976; [Donalies & Völz](#), 1960; [Elonen, Tarssanen & Härkönen](#), 1979; [Gelfand & Harris](#), 1982; [Gilbertson](#), 1966; [Hahn & Lebeenkin](#), 2000; [Hatfield](#), 1979; [Hotson](#), 1934; [John](#), 1935; [Leonhardt](#), 1992[1949]; [Lincoff & Mitchell](#), 1977; [Matthews & Lawson](#) [NO DATE]; [McDonald](#), 1978; [Roch & Mach](#), 1960; [Rumack & Saltzman](#), 1978; [Samorini](#), 1994; [Unsigned](#), 1988.

PERSONAL EXPERIENCE:

[Bauer](#), 1995; [De Korne](#), 1994; [Festi & Bianchi](#), 1991; [Ott](#), 1976; [Samorini](#), 1998b.

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PHARMACOLOGICAL ASPECTS:

[Arnt et al.](#), 1979; [Baker et al.](#), 1971; [De Feudis](#), 1980; [Fraser](#), 1957; [Jobert, Thiebot & Soubiris](#), 1979; [König-Bersin et al.](#), 1970; [Matsui & Kamioka](#), 1979; [Ott](#), 1993; [Scotte de Carolis, Lipparini & Longo](#), 1969; [Stafford](#), 1977; [Stijve](#), 2000;

PHARMACOLOGICAL ASPECTS (Continued):

[Tyler](#), 1966; [Waser](#), 1970; [Waser](#), 1971a; [Waser](#), 1971b.

RECREATIONAL USE:

[Coleman](#), 1976; [De Korne](#), 1994; [Furst](#), 1986; [Heinrich & Hoffman](#), 2003; [Lincoff & Mitchell](#), 1977; [Ott](#), 1976a; [Ott](#), 1976b; [Ott](#), 1977; [Ott](#), 1993; [Pollock](#), 1975; [Rauh](#), 1987; [Robbins](#), 1976; [Rumack & Salzman](#), 1978; [Samorini](#), 1996; [Samorini](#), 1998b; [Stafford](#), 1977[1992]; [Stafford](#), 2003; [Unsigned](#), 1975a; [Unsigned](#), 1975b; [Unsigned](#), 1977a; [Unsigned](#), 1977b; [Unsigned](#), 1988; [Weil](#), 1980.

SANTA CLAUS:

[Arthur](#), 2000; [Highfield](#), 1994; [Hoffman & Hoffman](#), 2001; [Unsigned](#), 1994.

SHAMANISM:

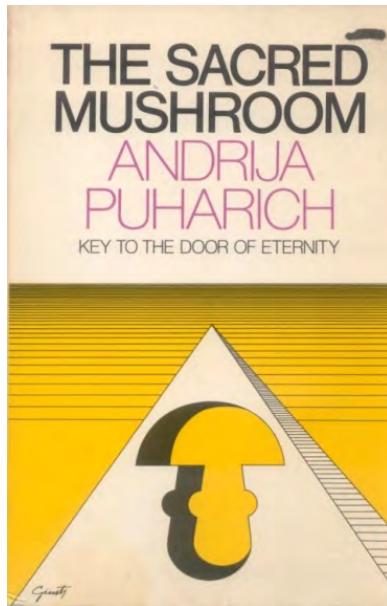
[Allegro](#), 1970; [Andrews](#), (DATE); [Bogoras](#), 1910; [Brekman & Sam](#), 1967; [De Korne](#), 1994; [Dobkin De Rios](#), 1976; [Dobkin De Rios](#), 1984; [Dittmar](#), 1900; [Heinrich](#), 2002a; [Heinrich](#), 2002b; [Heizer](#), 1944; [Irvin & Jutajit](#), 2005; [Itkonen](#), 1946; [Patkanov](#), 1897; [Samorini](#), 1998b; [Vanderlip](#), 1903; [Wasson](#), 2002a.

URINE DRINKING:

[Bogoras](#), 1910; [Dobkin De Rios](#), 1976; [Dobkin De Rios](#), 1984; [Heinrich](#), 2002a; [Heinrich](#), 2002b; [Lansdell](#), 1882; [Sarychev](#), 1905-1915; [Unsigned](#), A; [Unsigned](#), B; [Wasson & O'Flaherty](#), 1968.

WASSON:

[Wasson](#), 1960; [Wasson](#), 1964; [Wasson](#), 1967; [Wasson](#), 1968; [Wasson](#), 1970a; [Wasson](#), 1970b; [Wasson](#), 1971; [Wasson](#), 1972a; [Wasson](#), 1972b; [Wasson](#), 1972c; [Wasson](#), 1976; [Wasson](#), 1979a; [Wasson](#), 1979b; [Wasson](#), 2002a; [Wasson](#), 2002b.



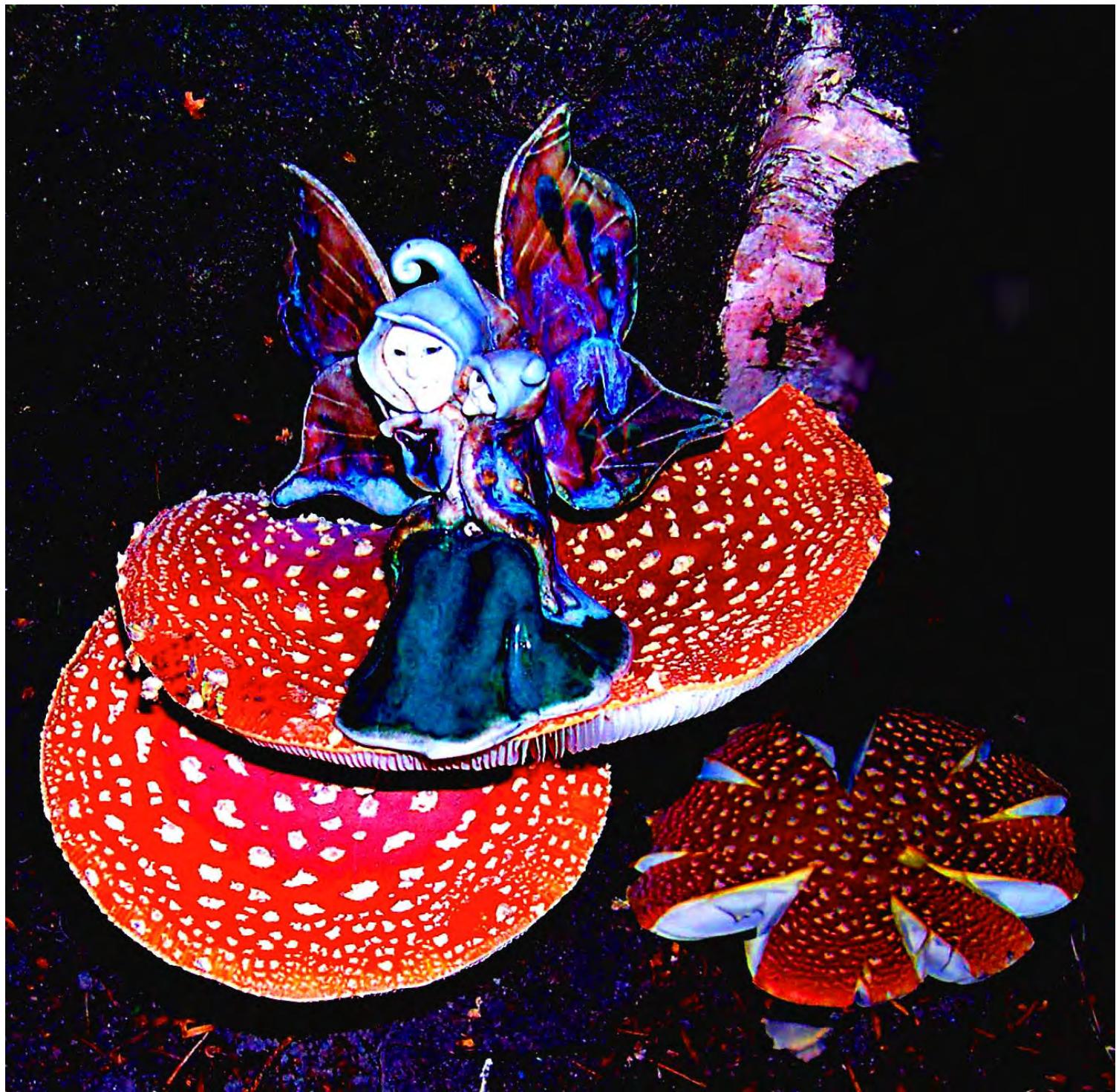


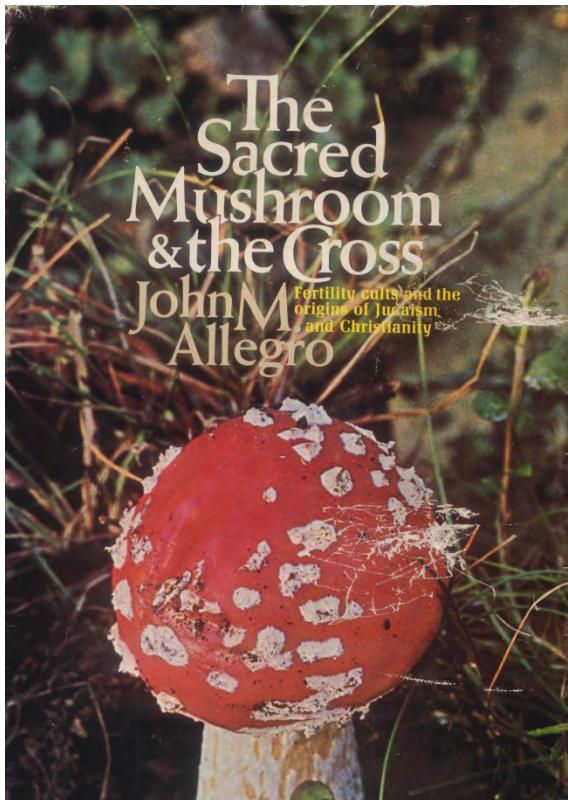
Fig. *Amanita muscaria* - Greenlake, Seattle. This *Amanita* was under a tree next to a large boulder and someone had placed this fairy on the fresh specimen. A later visited to this location and someone had taken the fairy away.

SOMA REFERENCES

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Allegro, John. 1970. *The Sacred Mushroom and The Cross*. Doubleday. New York.

This book was originally serialized in *The News of the World* (an English tabloid newspaper from Great Britain). Also see Hodder & Stoughton edition. London. This book has also appeared in German and French editions. See next two entries.



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The French edition of *The Sacred Mushroom and the Cross*.
In French.

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This is the main chapter out of the book 'The End of a Road' by John Marco Allegro. That book intended to promulgate the fundamental thesis's of the author, explicated in his more scientific '*The Sacred Mushroom and the Cross*'. The book was about the eminent role of the fly agaric in the fertility-cults of the ancient Middle East - from a linguist's point of view decoding apparent well-known texts, for example the Bible.

Ammirati, Joseph., Traquair, James a., and Paul A. Horgen. 1985. *Poisonous Mushrooms of the United States and Canada*. Minister of Supply and services Canada. Catalogue #A54-3/30E. University of Minnesota Press. Minneapolis (see Chap. 12:185-220. Also 1989 edition).

An excellent identification of entheogenic mushrooms from the Pacific Northwest is presented.

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Andrews, George. (Ed.).0 (DATE). Siberia. *Drugs and Magic: A Consciousness-Expanding and Far Reaching Anthology*. Chapter 13:201-212.

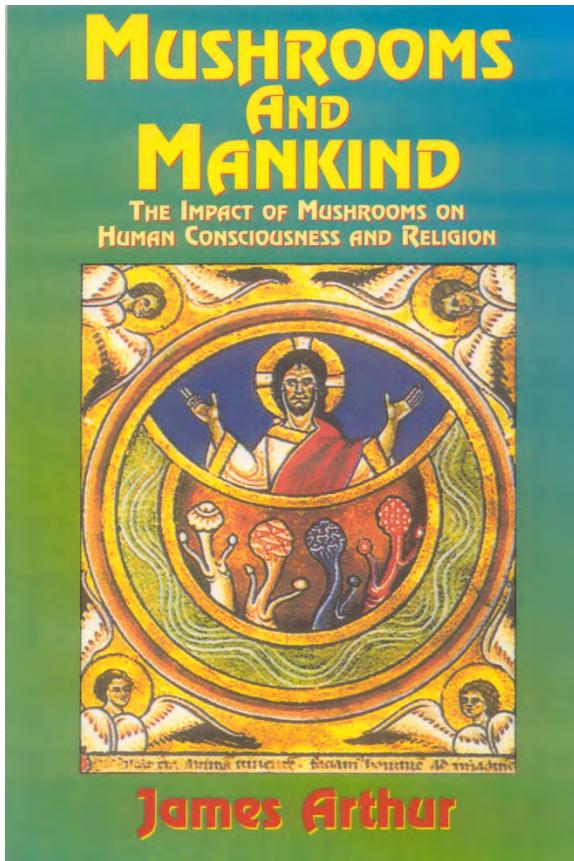
This article discusses the use of *Amanita muscaria* in Siberia.

Arnt, J., Scheel-Kruger, J., Magelund, G., and P. Krosgaard-Larsen. 1979. Muscimol and related GABA receptor agonists: The potency of GABA ergic drugs in vivo determined after intranigral injection. *Journal Pharm. Pharmacol.* vol. 31:306-313.

Arthur, James. 2000. *Mushrooms and Mankind: The Impact of Mushrooms on Human Consciousness and Religion*. The Book Tree. Escondido, Ca.

A study of the impact of mushrooms and humankind

throughout the ages. This one is focused on the history of the alleged Soma mushroom *Amanita muscaria* from Egypt to the far east. Many illustrations. For related Santa/Amanita info see, [Highfield](#), 2000; [Unsigned](#), 1994.



Arthur, James. 2000. *The Mushrooms that Shape the Universe*. In conjunction with bluehoney.org/ Recorded live in Sisters, Oregon at 'Consciousness Technologies 2000'. Video: 105 minutes. Online at Erowid:https://erowid.org/library/videos/amanita_muscaria.shtml.

Erowid reviewed this annotation for James Arthur's online video. James Arthur is passionate about *Amanita muscaria* mushrooms. He speaks at conferences, writes books, devotes time to his websites, and publishes videos about his passion. While the Erowid crew does not agree with many of his interpretations of the prominence of *A. muscaria* in art and history, we have spoken to several people who have thoroughly enjoyed his presentations and talks and found them thought provoking. This video is a live recording of a presentation given at a small conference in Oregon. As with his earlier video *Mushrooms and Mankind*, it primarily consists of the narrator (James Arthur) discussing various aspects of the symbology of *Amanita muscaria* representation in ancient and modern art while flipping 187

| Page through examples in a slideshow. James Arthur has an irreverent and casual presentation style and gets into many seemingly far-fetched theories about the role of *A. muscaria* throughout history, but it's interesting to see some of the artistic and spiritual representations of *Amanitas* in a wide variety of contexts. We at Erowid are not quite sure what to say about the back cover blurb (below) except that it seems to have little to do with the actual video. Unless you've been waiting impatiently for a video on this topic for years wondering "why isn't anyone documenting this topic more!?", it doesn't qualify as "the most important video of the 20th century". As an interesting side note, the rest of the space on the video we received is filled with footage of a seemingly unrelated rock band playing a Led Zeppelin song. Odd. James Arthur wrote us with a description of how it's related. He said: "It is a video of a band I am in, a Led Zeppelin Tribute band. Led Zeppelin has a film called "The Song Remains The Same" wherein they highlight the *Amanita muscaria* which features prominently in their music and lyrics. It is just something that those who know would know. "You Really ought to know" (Led Zeppelin lyric). We toured for 10 years and have been praised as the best Led Zep tribute act in the world by several Zep fanzines."

BACK COVER : Recorded live in Sisters Oregon at 'Consciousness Technologies 2000'. Enter Consciousness Technologies and usher in the new millennium. The event that shaped the minds of a whole new generation of exploration. This video is a visionary statement for the future of humanity. Exposing so many of the worlds mysteries it must be labeled the most important video of the 20th century. [Sic.]?

Arthur, James. 2017. *AMANITA MUSCARIA: THE MUSHROOMS THAT SHAPED MANKIND*. Online: <https://totalrehash.com/amanita-muscaria-the-mushrooms-that-shaped-mankind-by-james-arthur/>.

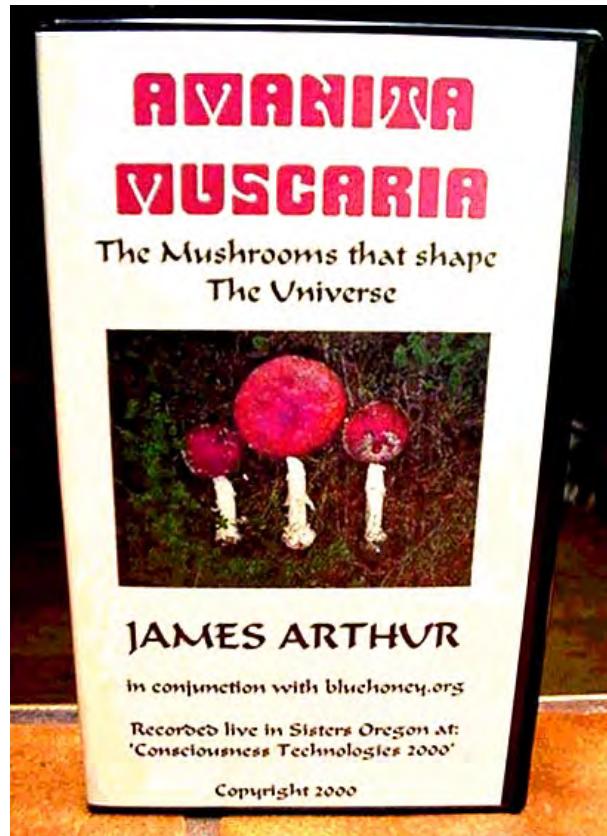
This is an online page at a site called Totalrehash.com. This paper was placed online in 2017, However, the author passed away on.....?? The page has some of his book and numerous photos of poor quality for viewing (very blurred). Interspersed with the photos are videos and ads for food and other products. At the end were only 5 references, two were for Arthur and three others (Letcher, 2007; Rutajit, 2000, and Van Renterghem, 1995).

Baker, R. W., Chothia, C. H., Pauling, P., and T. J. Petcher. 1971. Structure and activity of *Amanita* stimulants. *Nature* vol. 230:439.

Bandoni, R. J., Bandoni, A. A. and T.W. Flegel. 2002. The Forgotten Kingdom. BIOTEC. Mycology Laboratory, The National Center for Genetic Engineering and Biotechnology, Thailand.

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A beautiful pictorial collection of mushroom photographs from Thailand by T. w. Flegel, Poramate Ruksawong and Thitiya Boonpratuang. For related information about *Amanita mira* in Thailand and Malaysia, see: (Sanmee, Tulloss, Lumyong, Dell, and Lumyong, 2008).



Baraldi, M., Grandison, L., and A. Guidotti. 1979. Distribution and metabolism of muscimol in the brain and other tissues of the rat. *Neuropharmacology* vol. 18:57-62.

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Bauer, Wolfgang. 1991b. Die Gestalten des Fliegenpilzes und ihres symbolischen Bezüge. In: Bauer, W. et al. (Eds.). *Der Fliegenpilz: Ein Kulturhistorisches Museum*:195-199. (Museum der Museen, Schriftenreihe des Karl Ernst Osthaus-Museums, Bd. 6),

Wienand-Verlag. Köhn, Germany. With illustrations by R. Dobramysl.
In German.

----- 1992. Der fliegenpilz in Zaubermärchen Märchenbildern, sagen, liedern und gedichen. *Integration: Zeitschrift für Gesitbewegende Planzen und Kultur* vol. 2-3:39-53.

The fly agaric in fairy tales, legends, songs and poetry is traced from their origins in Europe and throughout the world. **In German.**

----- 1995. Ein versuch mit "zwergenwein." *Integration Journal for Mind Moving Plants and Kulture* vol 6:45-46. About the cup shaped varieties of *Amanita muscaria*. **In German.**

----- 2000. The Tabu surrounding the Fly-Agaric. (Das Tabu um den Fliegenpilz). In: Bauer, Wolfgang, Klapp, Edzard and Alexandra Rosenbohm's *Der Fliegen Pilz*:98-113. *Traumkukt, Märchenzauber, Mythenrausch*. AT Verlag, Aarau, Schweiz, Germany.

----- 2000. The fly agaric in fairy tales and fairy tale-pictures (Der fliegenpilz in Zaubermärchen und Märchenbildern). In: Bauer, Wolfgang, Klapp, Edzard and Alexandra Rosenbohm's *Der Fliegen Pilz*:137-139. *Traumkukt, Märchenzauber, Mythenrausch*. AT Verlag, Aarau, Schweiz, Germany.

It is discussed that in German fairy tales (mainly as written down by the brothers Grimm) that the fly agaric may be hidden in the name of the agent which produces a change in the story, f. e. "water of life" (=the juice out of the pressed fly agaric?) in the fairy-tale of the same name, "ginger bread" in "Hänsel und Gretel" (tried huts of *Amanita pantherina*?). Also that the illustrators of the fairy tales gave direct hints of the means of change if they for example put a fly agaric near the coffin of the coma stricken Snow White or show fly agarics at the place where Little Red Riding Hood gathers, as the tale tells, "red flowers" off the road.

----- 2000. The fly agaric in literature - Pathways to the self (Der fliegenpilz in der literatur - Wege zum selbst). In: Bauer, Wolfgang, Klapp, Edzard and Alexandra Rosenbohm's *Der Fliegen Pilz*:140-145. *Traumkukt, Märchenzauber, Mythenrausch*. AT Verlag, Aarau, Schweiz, Germany.

Many examples are demonstrated here where the fly agaric plays an important part in the literature of the 19th and 20th century - from Lewis Carroll's "magic mushroom" of *Alice in Wonderland* (1864) to Mika Waltari's witch's brew

loaden with fly agaric (1955) and Bernhard Kegel's aggressive, nature destroying "amanita wenzeli" (1977).

Bauer, Wolfgang, Klapp, Edzard and Alexandra Rosenbohm, Hg. (Eds.). 2000. *Der Fliegen Pilz: Traumkult, Märchenzauber, Mythenrausch*. AT Verlag, Aarau, Schweiz.
A magnificent book covering many aspects from different sources on the cultural, historical and chemical history of *Amanita muscaria*. In German.



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For a related article see [Kneifel and Bayer \(1986\)](#).

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Isoxazole derivatives on the CNS and several case histories as well as treatment for poisoning is described. Also see pp. 164-165.



Bergman, Sten. 1926. *Volcanoes, Bears, and Nomads*:159-160. Stuttgart. Germany.

This article relates the tale of a Koryak reindeer herdsman searching for the fly-agaric. See R. Gordon Wasson and Wendy Doniger O'Flaherty's [Soma: Divine Mushroom of Immortality](#):285.

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Many ancient cultures and religions engaged in various techniques and used various substances to instigate religious experience and to alter perception. These techniques of psycho-sexual drug yoga reached an unparalleled level of sophistication that arose and was often cloaked in practical terms of alchemy and metallurgy. The Vedic tradition describes this plant-based ritualism as soma, which has been identified by Gordon Wasson as the mushroom *Amanita muscaria*. This article traces these soma-influenced sects of esoteric Buddhism that exerted influences from India, China and Tibet to Japan. Some of the key components, practices and symbolism are retained despite numerous cultural filters. Japan's tradition of esoteric Buddhism can thus be seen to have preserved and incorporated the soma/amrita mushroom lore into its own traditions of mountain ascetic mystics.

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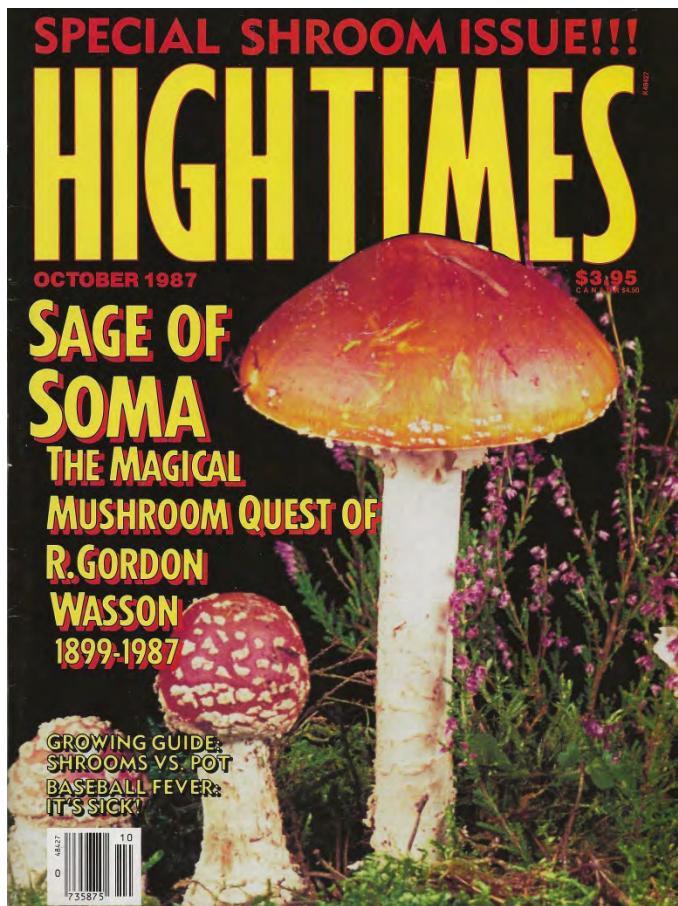
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Fulvio Gosso and Gilberto Camilla of SCSSI (Società` Italiana per lo Studio degli Stati di Coscienza) have finished the finest work of anthropological research on old Christianity and hallucinogen plants and mushrooms and their possible use via ritualistic means. This fine work displays photo frescos of catholic church mushroom symbolism and other entheogenic plant materials to that of historical handmade ancient bibles,,, many illustrations of middle age sacred art show us possible evidence of vast use of these substances in Christian mythology and history. Under discussion are two distinct groups of mushrooms. Those containing tryptamine compounds of psilocine/psilocybine (particularly *Psilocybe semilanceata*), and those species known to contain ibotenic acid and muscimol (*Amanita muscaria* and related species). Quando R. Gordon Wasson e la moglie Valentina Pavlovna nel loro pionieristico studio etnografico *Russia, Mushrooms, and History* (1957) ipotizzarono che il frutto senza nome dell'Albero del Giardino dell'Eden fosse un fungo, l'*Amanita muscaria*, sconvolsero non poco i loro contemporanei. Si accertò poi che droghe di ogni tipo sono usate da sempre per raggiungere l'estasi e il contatto sciamanico con dimensioni soprannaturali e sono presenti nelle religioni del Medio e Vicino Oriente, così come nei culti egizi. Più ad oriente venivano praticati i riti dell'Haoma persiano, e quello analogo del Soma dei brahamani indiani, tradizioni che i migranti indoeuropei portarono con sé in Europa come base del Druidismo e di altri culti celtici. Il lavoro di ricerca condotto da Camilla e Gosso, la ricca documentazione e le illustrazioni di numerosi alberi-fungo convalidano la tesi dell'uso di allucinogeni anche nella religione cristiana. This volume is lavishly illustrated with both color and black and white photographs of fungi and entheogenic plant symbolism from medieval times. For recent related literature see Toro, 2009. In Italian.

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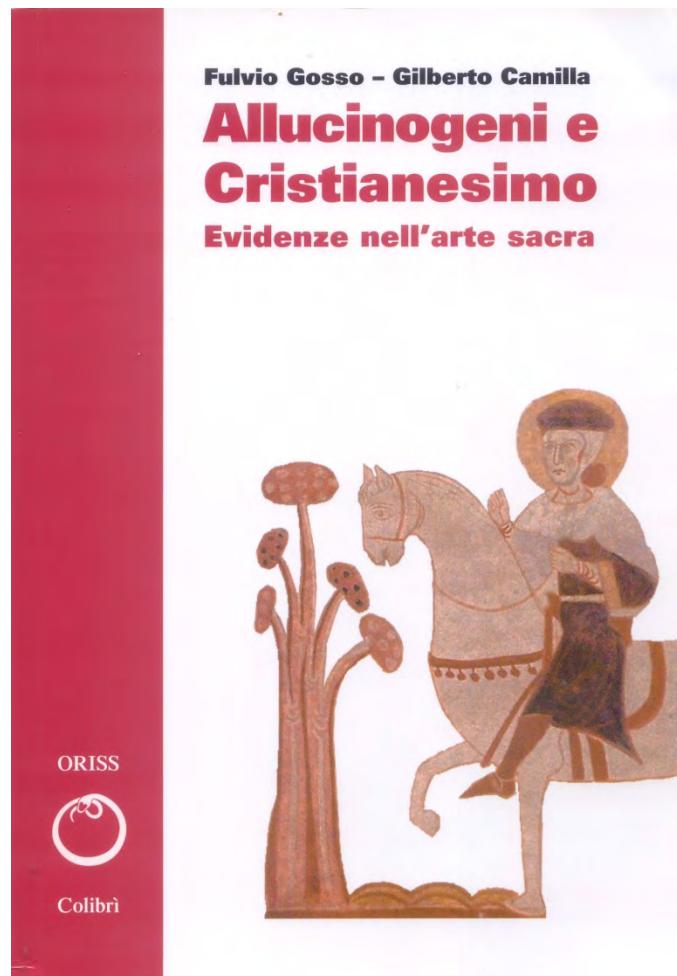
Graves provides historical facts concerning the ancient use of *Amanita muscaria*.

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discussions on the possible use of *Amanita muscaria* in North America and Mexico and some species of *Cordyceps*, as well as the 45 species of *Psilocybe* known of in Mesoamerica. Also under discussion are other fungi such as puffballs and edible mushrooms.



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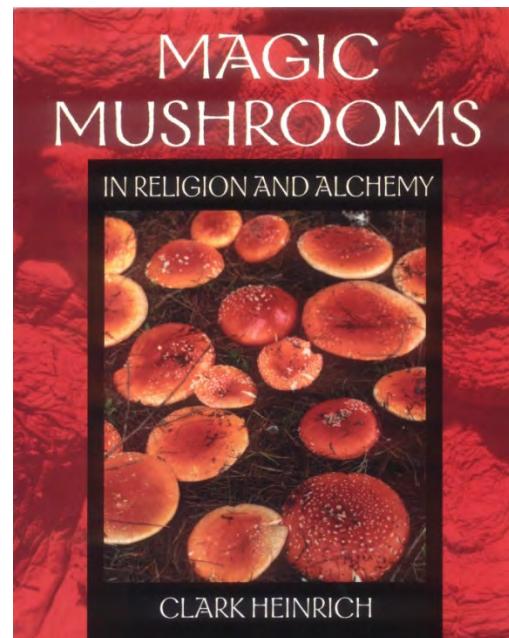
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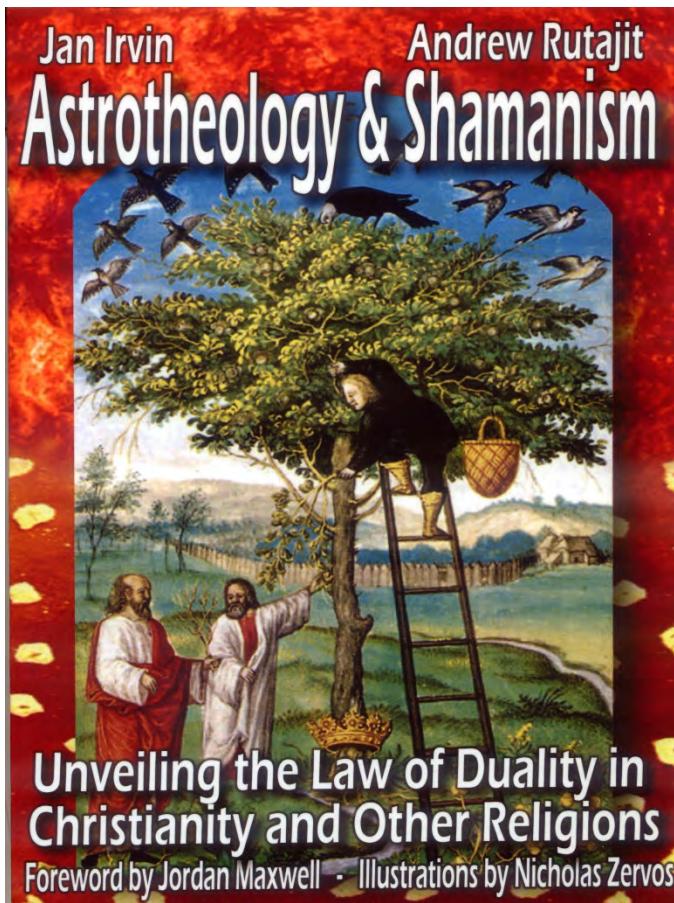
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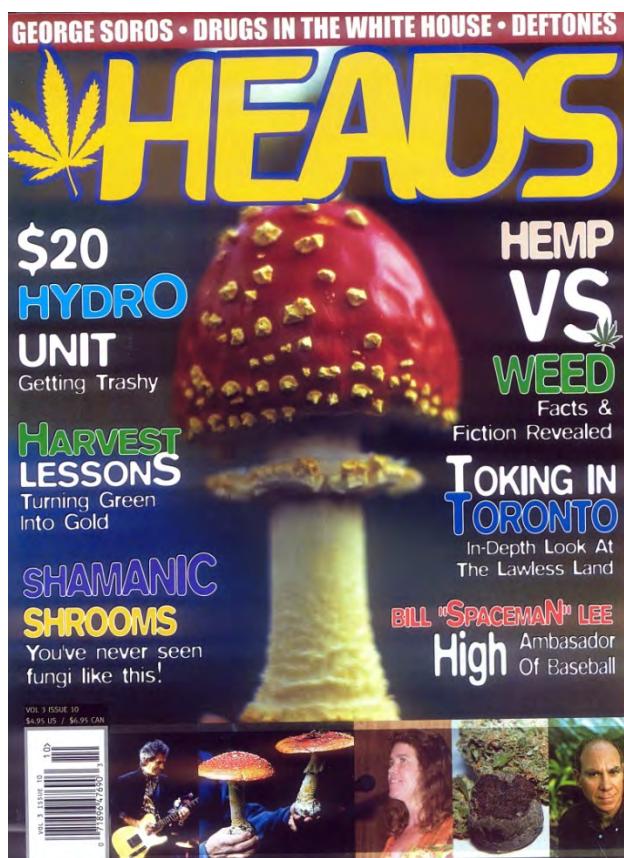
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Merlin, Mark D.. 2003. Archaeological evidence for the tradition of psychoactive plant use in the old World. *Economic Botany*, Vol. 57(3), 295-323.
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Müller, Gunter F. R. and C. H. Eugster. 1965. Muscimol, ein Pharmakodynamisch Wirkstoff aus *Amanita muscaria* (L.:Fr.) Hooker. *Helvetica Chemica Acta* vol. 48:910916.

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This paper discusses the use of the fly-agaric mushroom *Amanita muscaria* by the Ojibway tribal group of North America. For further information on North American use of *Amanita muscaria*, see [Keewaydinoquay, 1978, 1979](#). In French. Also translated into German. See next entry.

-----, 1993. Die Ojibway und der Fliegenpilz Für eine Ethnomykologie der Indianer von Nordamerika. *Integration: Zeitschrift für Geistbewegnde Pflanzen und Kultur* vol. 4:
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not seem to have been an object of religious, ritual veneration in northern Eurasia, whereas this was true for the *Psilocybe* mushrooms in Mesoamerica. This is suggested to be a result of the difference between these two mushroom groups in their pharmacological and clinical effects on man and also a result of vast cultural differences between the areas in question. The cultural and religious differences between northern Eurasian and Mesoamerican use of hallucinogenic fungi and the significance of these differences are discussed.

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A review from a special issue [José Liiz Díaz, Invited Editor] entitled Etnofarmacología de Plantas Alucinógenas Latinoamericanas, based on the symposium under that name celebrated in May 1975 during the viii Congreso Latinoamericano de Psiquiatría, Acapulco, Guerrero, México. In Spanish.

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A review of R. Gordon Wasson's Soma: Amanita muscaria hypothesis and the scientific debate it has stimulated, including a complete bibliography of Wasson's 15 publications on the subject, as well as the most important review by Vedists and ethnobotanists, featuring a critical discussion of three alternate candidates for soma inspired by RGW's convincing demonstration of its entheogenic nature: 1) D. S. Flattery and M. Schwartz, proposal of *Peganum harmala*; 2) R. F. Schroeder and G. Guzmán's suggestion of *Psilocybe cubensis* as Soma; and 3) M. T. Greene's hypothesis of an ergot-infested wild grass, all of which have been considered--and rejected--by Wasson (see Ott, 1998).

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This paper reviews the publications of R. Gordon Wasson on the identification of the ancient Aryan entheogenic plant. This article is also in Italian as "La storia della pianta del Soma le ricerche di Wasson" and is a revised and enlarged version of a Castilian article (see Ott, 1994).

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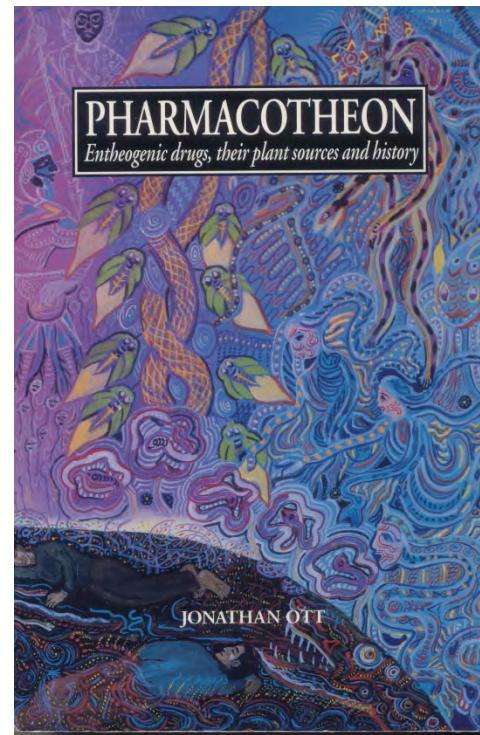
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Pettis, Edie. 1991. *Soma and the Image of Light*. 27p. (Unpublished manuscript in the authors [JWA] private library).

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Spirituality vol. 2(1):77-91.

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Pollock, Steven H. 1975. The Alaskan Amanita quest. *Journal of Psychedelic Drugs* vol. 7(4):397-399. October-December.

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----- 1969c. **Mushroom icons.** *Bulletin of the Mycological Society of Japan* vol 9(12):8-10, 16.

Rätsch, Christian. 1998. *Enzyklopädie der psychoaktiven Pflanzen*. Botanik, Ethnopharmakologie und Anwendung. A T Verlag, Aarau, Switzerland. An encyclopedia of psychoactive plants, lavishly illustrated with numerous photographs of more than 168 entheogenic plants. 942pp., 670 black and white illustrations, and 800 colored photographs. Over 70 pages are devoted to "magic

mushrooms." For an English language review of this new book see: Gartz, Jochen. *Eleusis n.s.* 1:123-124 (1998). Rätsch's 1st edition is in German. A Recent new 2nd edition is now available in English. See pages 631-642. Also under discussion is *Amanita pantherina*. English edition: Rätsch, Christian. 1998. *The Encyclopedia of Psychoactive Plants: Ethnopharmacology and Its Applications*. Foreword by Albert Hofmann. Park Street Press. Rochester, Vermont. 1st U.S. Edition: 2005. Translated by John R. Baker with assistance by Annabel Lee and Cornelia Ballent. SUMMARY: Provided by Publisher. "The most comprehensive guide to the botany, history, distribution and cultivation of all known psychoactive plants." This book features about 2/3rds of the known species of psilocybin psychoactive fungi as of 1998. However, other species include Amanita and other genera of fungi that contain psychoactive properties other than psilocine/psilocybine.

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The preface deals with the many aspects of the fly agaric in the mind of men worldwide, being loved as holy by one person or being hated as "deadly" poisonous by another.

----- 2000. Tengu: The spirit of the Fly-Agaric. In: Bauer, Wolfgang, Klapp Edzard and Alexandra Rosenbohm (Eds.) *Der Fliegenpilz*:66-67. Ein Kulturhistorisches Museum. (Museum der Museen, Schriftenreihe des Karl Ernst Osthaus-Museums, Bd. 6). Winand-Verlag. Köhn, Germany.

Rauh, W. 1987. (Mag.). High Times vol. 146: Cover. October.

Photograph of *Amanita muscaria*.

Reiner, R. and C. H. Eugster. 1967. Zur kenntnis des muscazon. *Helvetica Chimica Acta* vol. 50:128-136.

Repke, D. B., Dale, T. L., and N. G. Kish. (No Date). Gas Chromatography-mass spectral analyses of hispidin, bis-noryangonin, muscimol and ibotenic acid. *Journal of Pharmaceutical Science* vol. 67(4):485-487.

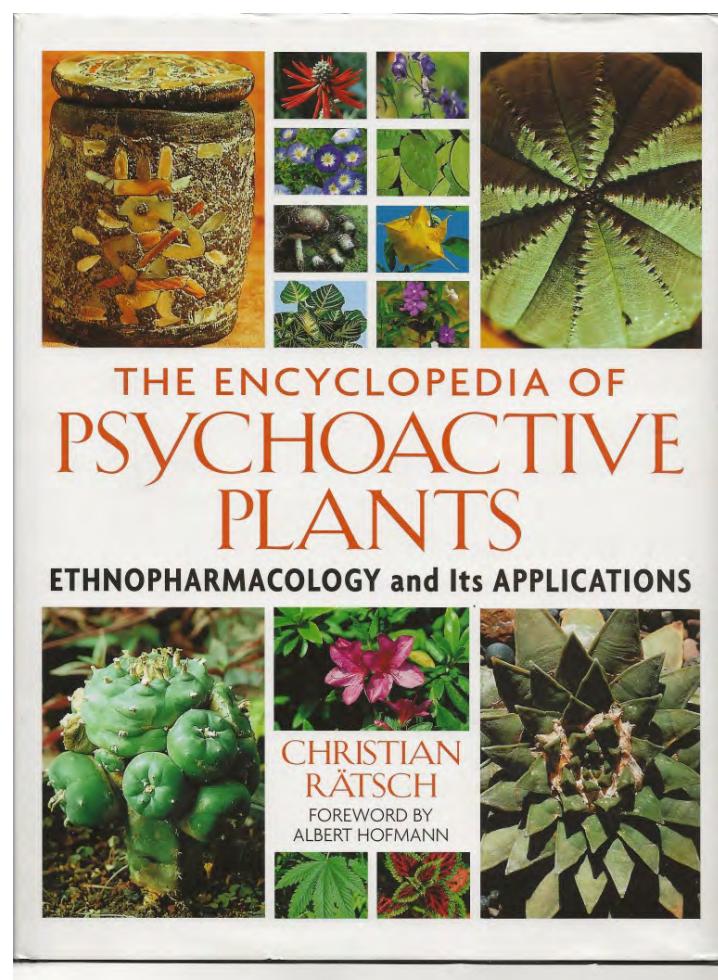
Repke, D. B., Leslie, D. T., Mandell, D. M. and N. G. Kish. 1977. GLC-Mass spectral analysis of fungal metabolites. *Journal of Pharmaceutical Science* Vol.66:743-744.

Rippon, John Willard. 1982. Ibotenic acid, muscimol and Muscazone. *Medical Mycology. The Pathogenic Fungi and the Pathogenic Actinomycetes*. Chapter 28:701-720 (see p. 709-710). W. B. Saunders Co. Philadelphia.

Describes the chemical actions of Amanita and Amanita pantherina and discusses the Soma complex and Siberian use of these mushrooms.

Richardson, C. C. 1971. (Bk. Rev.). Mr. Allegro among the mushrooms . *Union Seminary Quarterly Review* Vol. 26(3):1.

A review of John Allegro's 1970 *Sacred Mushroom and the Cross*. For related information see Jacobson and Richardson (1971).



Riedlinger, Thomas J. 1993. Wasson's alternative candidates for Soma. *Journal of Psychoactive Drugs* Vol. 25(2):149-156.

In which the author offers several alternative plants for the

Soma plant including Peganum Harmala, Datura and Cannabis.

Robbins, Tom. 1976. (Mag.). Superfly, the toadstool that conquered the universe. *High Times* vol. 16:89-95, 104, 130. December.

This article originally appeared in *Northwest Passage* (a Seattle, Washington publication, pp. 5 et seq). It was eventually reprinted in *The Best of High Times* vol. 1:67. 1974-1976.

Roch, M. and J. P. Mach. 1960. Délire grave et prolongé causé par un empoisonnement par *Amanita muscaria* (fausse orange). *Praxis* (Bern) vol. 49:225-227. In French.

Römer, Stefan. 1992. *Amanita muscaria. Integration: The Journal for Mind Moving Plants and Kultur* vol. 2-3:133-134.

Roper, Arik Moonhawk. 2009. *A Visionary Field Guide Mushroom Magick*. Abrams. New York.
This book should not be endorsed as a reliable guide for amateur foragers to use in identifying natural occurring species of magic mushrooms as the context of the book suggests that it is a 'comprehensive guide' to the species rendered inside the book. This work contains 94 full-paged watercolor renditions of hallucinogenic species. However, it is wrought with bad representations of the hallucinogenic psilocybian species featured in the guide. The author also painted 9 species that are not active species, but are often listed in edible and other mushroom field guides as possibly hallucinogenic, most whose original analysis was based on false positives of such species and obtained by chemical analysis in the early history of these mushroom species. Also included are 6 images not identified by name. In many images, the stems are either too fat and thick or to skinny to belong to actual specimens of the species portrayed in this pictorial and many of those species represented also have caps in which their shapes are either too large and bulbous and are also not representative of the species. While the art is beautiful and colorful, the artist did not correctly sketch the veils on certain species found in the PNW and elsewhere throughout the world. His renditions of *P. fimetaria*, *P. subfimetaria*, *P. stuntzii*, and *P. silvatica* are bad and do not look anything like the actual species. So is the case with many other rendered paintings in this book. Another example is the perfect liberty cap drawing which is well done, and then the appearance of a second image of a liberty cap of *Psilocybe semilanceata* with pure blue gills, a feature never happening in that species. In fact, the majority of liberty caps rarely contain any bluing in collected specimens, but *Psilocybe* gills never stain blue, a feature

which only occurs on the stem and/or edges of a cap. The artist also labeled the non-active species *Panaeolina foeniseccii* as a *Psilocybe* rather than identifying it as a brown-spored species belonging to the genera of *Panaeolina*. In the book, the author has two paintings of *Panaeolina foeniseccii*. Both are labeled as in the *Psilocybe* genera. The first painting titled as *Panaeolus foeniseccii*, kinda resembles a completely dried bell-shaped mushroom. In the 2nd image of *Panaeolus*, the author has the bands of color and a proper representation of the species labeled as *Panaeolus koeniseccii*, a misspelled non-existing name for a species. While the book is advertised as a field guide, it should never be recommended to be used by amateurs seeking a relationship with the mushrooms described. More surprisingly is the fact that one of the most prominent and respected mycologists in the world, Gary Lincoff, an expert in the field of entheogenic fungi and edible and toxic mushroom identification who compiled and wrote notes to this guide, failed in catching these macroscopic errors in identification of the painted species. The book contains essays on magic mushrooms by Daniel Pinchbeck and Erik Davis. Still with all the errors, it is a nice book and quite pleasant to the eye.

Rosenbohm, A. 1991. Der Fliegenpilz in Nordasien. In: Bauer, Wolfgang, Klapp, Edzard and Alexandra Rosenbohm (Eds.) *Der Fliegenpilz: Ein Kulturhistorisches Museum*:121-164. (Museum der Museen, Schriftenreihe des Karl Ernst Osthaus-Museums, Bd. 6) Weinand-Verlag. Köhn, Germany.
In German.

-----, 2000. The fly Agaric in Siberia. In: *Der Fliegenpilz. Traumkult, Märchenzauber, Mythenrausch*:72-97. At Verlag. Germany.

Bulb-Feeted Little Earl is about the curious hallucinogenic use of *Amanita muscaria* in Siberia which has been known of since 1730. It was then that a Swedish military officer, a prisoner of war in Siberia for twelve years, reported that primitive tribesmen there employed *Amanita muscaria* as a shamanistic inebriant, to induce ecstasy or bring about a trance. The custom persisted among scattered groups of Finno-Ugrian peoples and other groups in the vast northern region. In the mushroom-induced state of consciousness shamans experience a soul-searching journey where they communicate with spiritual beings for divination, curing people and accompanying the souls of the dead persons into the other world or to have luck in hunting etc. Therefore the fly agaric was respected as a being of supernatural origin: The Uralic Mansi named the mushroom in their mythic songs for example as "bulb-feeted little earl." This was, according to their tales a son of the being "world-watching-man" who was the prototype shaman and who was called

up by shamans during their ceremonies. In the article is described, how dangerous the ingestion of this mushroom is and how the ceremony was surrounded by different ritual preparations, taboos and other measures, like fasting and visiting the sweat lodge or fumigation. Different mythic tales tell from the appearances of the mushroom in the trance of the 'bemushroomed' shamans: It could be a mushroom-shaped little person, it could sing, dance or guide the shaman through the Upper- and Underworld - sometimes the shaman could see so many mushroom-beings like the amount of fly agarics what he had consumed. Some legends introduce even a community of fly agaric people. The change of meaning of the mushroom from a holy plant to a symbol of terror in course of civilization is to be put down to the faded or lost relationship between man and nature and its material and especially spiritual resources. In this regard the continuing existence of the fly agaric is to be understood as a reminder of nature for the slow but nevertheless dramatic change of the relation of mankind itself.

Ruck, A. P. Carl. 2006. *Sacred Mushrooms of the Goddess and the Secrets of Eleusis*. Ronin Publishing Inc. Berkeley, California. 192 Pages.

This book "delves deeply into the mythic roots of Western European spirituality" and the relationship of mushrooms as divinatory preparations into manhood. Furthermore, it also supports the theories and findings of the earlier R. Gordon Wasson books, *Persephone's Quest* and *The Road to Eleusis*.

Rumack, Barry H. and Emanuelle Saltzman (Eds.). 1978. *Mushroom Poisoning: Diagnosis and Treatment*. CRC Press. Cleveland.

Saar, M. 1991a. Ethnomycological data from Siberia and North East Asia on the Effect of *Amanita muscaria*. *Journal of Ethnopharmacology* vol. 31(2):157-174.

Saar, M. 1991b. Fungi in Khanty folk medicine. *Journal of Ethnopharmacology* vol. 31(2):157-173.

Saleminck, C. A., ten Broeke, J. W., Schuller, P. L., and E. Veen. 1963. Über die basischen Inhaltsstoffe des Fliegenpilzes XII. Mitteilung: Über die Anwesenheit von I-Hyoscyamin. *Planta Medica* vol. 11:139-144. The basic components of the fly agaric are described. In German.

Samorini, Giorgio. 1994. Un'intossicazione involontaria de *Amanita pantherina* Nel. 1956. E I segreti Santa Caterina Da Genova (1447-1510). *Bullettino d'Informazione SISSC*. N.7:13-15. Giugno.

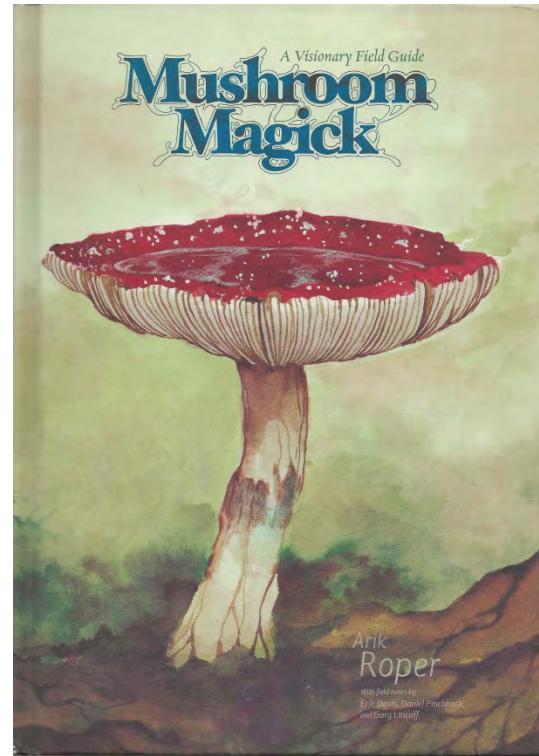
In Italian. Additionally, an English translation of this paper is on file with the authors: "A case of involuntary *Amanita pantherina* intoxication in 1956 and the secrets of Saint Catherine of Genoa (1447-1510). 7 pages.

Samorini, Giorgio. 1995. (Bk. Rev.). La Historia de la Planta del "Soma" después de R. Gordon Wasson, In: Josep M. Fericglà (Ed.), *Plantas, Chamanismo y Estados de Consciencia*. Los Libros de la Liebre de Marzo. Barcelona, Spain.

A review of a paper written by Jonathan Ott.

----- 1996. Un singolare documento storico inherente l'agarico muscario/A peculiar historical document about Fly Agaric. *Eleusis* no.4:3-16.

During the 1880s of the last century, the price of wine had risen considerably because of a blight of the European vineyards, attacked by a parasitic insect. In 1880 a physician of the Como province suggested replacing wine with fly agaric, easily available at a low price. He tested different dosages of dried mushrooms on himself and on a group of volunteers. Furthermore, in a report written by this young physician, this fly agaric was used for recreational purposes in Milan in 1880 by the popular belief that this mushroom "made one sing." In Italian.

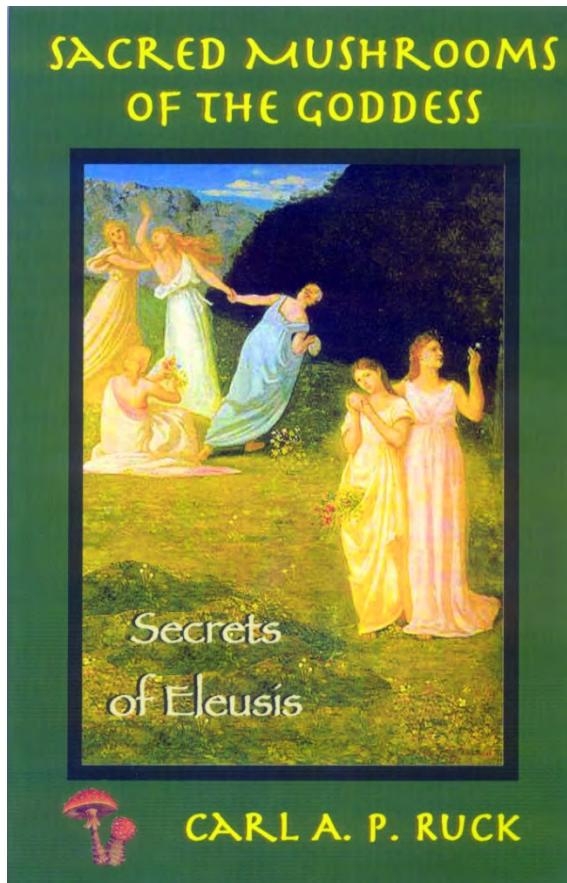


Samorini, Giorgio. 1998a. The "Mushroom Trees" in Christian Art. *Eleusis* n.s. vol. 1:87-108.

A very detailed pictorial investigation about mushroom shaped paintings in early Christian art. In Italian and English.

Samorini, Giorgio. 1998b. *Amanita muscaria*. Autori Vari. A Cura di Giorgio Samorini. 62 pages **Nautilus** C. P. 1311 - 10100, Torino. Questi testi non sono sottoposti ad alcun Copyright.

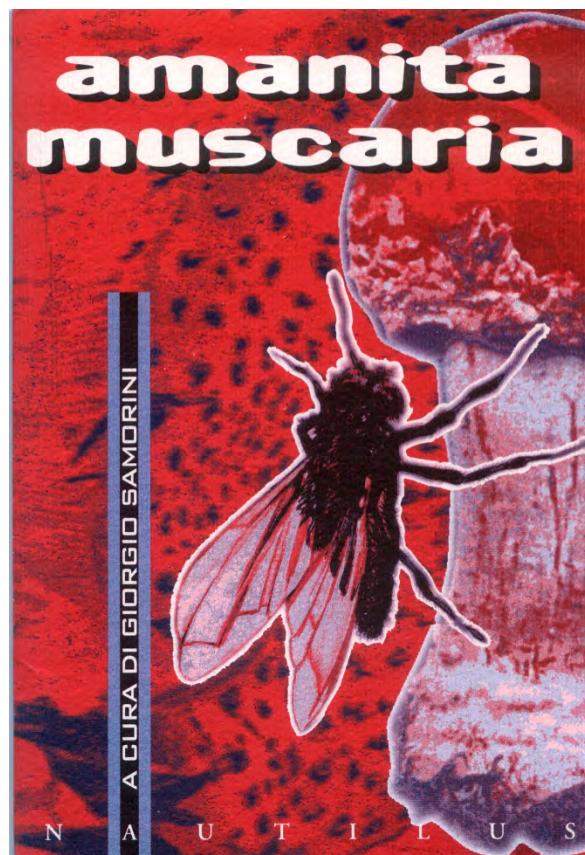
A small pamphlet on *Amanita muscaria* with some data from other authors. Introduzione. L'uso dell'*Amanita muscaria* fra le popolazioni della Kamchatka. In una yurta siberiana. Riconoscimento della specie. I principi attivi. Esperienze con *Amanita muscaria*. L'*Amanita muscaria* in Italia. Il nostro agarico muscario sperimentato come alimento nervoso. L'*Amanita muscaria* continua ad essere avvolta nelle spesse nebbie del tabù degli allucinogeni, un tabù che ha una lunga storia e che spiega, tra l'altro, quell'ingannevole teschio che ancora oggi marchia questa specie nei manuali per raccoglitori di funghi. In questo saggio sono stati raccolti scritti di differenti autori. In Italian.



----- [as: Telesterion Vicenza]. 2000. *Animali chi si drogano*. Copyright 2000 by Telesterion Vicenza. English translation copyright 2002 by Inner traditions. In Italian. See next entry.

----- 2002. *Animals and Psychedelics*. The Natural World and the Instinct to Alter Consciousness. See Chapter 4: Mushroom - Loving Reindeer Craving Caribou:38-42. Park Street Press. Rochester, Vermont. 98 Pages.

The author discusses how reindeer and caribou love *Amanita muscaria* and also how animals love to consume and then frolic while on the effects the psilocybin containing varieties of both *Psilocybe* and *Panaeolus* mushrooms. Translated from Italian by Tami Calliope with a foreword by Rob Montgomery, founder of the Botanical Preservation Corps.



Samorini, Giorgio and Gilberto Camilla. 1995 [1994]. Rappresentazioni fungine nell'arte Greca. *Annali dei Musei civici Rovereto* Sez.: Arch. St., Sc. Nat. Vol.10:307-326.

Examines the possible use of hallucinogenic fungi in ancient Greece. In Italian.

Sanmee, R., Tulloss, R.E., Lumyong, P., Dell, B., and S. Lumyong. 2008. Studies on *Amanita* (Basidiomycetes,

Amanitaceae) in Northern Thailand. *Fungal Diversity.* Specimens of the genus *Amanita* collected from northern Thailand and deposited in the fungal herbarium of Chiang Mai University and some overseas herbaria were studied. Twenty-five taxa, including eighteen new to Thailand, are described briefly. A key to species is provided. The new records for Thailand are *A. alboflavescens*, *A. avellaneosquamosa*, *A. chepangiana*, *A. clarisquamosa*, *A. flavipes sensu lato*, *A. fritillaria*, *A. fuliginea*, *A. hongoi*, *A. japonica*, *A. manginiana sensu W.F. Chiu*, *A. obsita*, *A. ovalispora*, *A. pseudoporphyrria*, *A. rubrovolvata*, *A. sinensis*, *A. sinocitrina*, *A. subglobosa*, and *A. virgineoides*. A type study of *A. pudibundais* included. *Amanita frostiana sensu R. Heim* is proposed to be properly diagnosed as *A. rubrovolvata*. See also, ([Bandoni, Bandoni and Flegel, 2002](#)).

Sarychev, Gavrill Andreevich. 1905-15. *An Eight-Year Voyage in Northeastern Siberia, on the Arctic Ocean and the Northeast Pacific (1785-1793)*:274-275. Originally in Russian edition published in 1802 in St Petersburg. A description of an account regarding the death of two reindeer who allegedly may have consumed human urine from someone who may have partaken of the fly agaric mushroom. This occurred in Chukchi country. See R. Gordon Wasson and Wendy Doniger O'Flaherty's "[Soma: Divine Mushroom of Immortality](#)":242-243.

Schaeffer, J. M. 1980. (3H) Muscimol binding in the rat retina. *Life Sci.* vol. 27:1199-1204.

Schleiffer, H. (Ed). 1979. *Narcotic Plants of the Old World*. Lubrecht & Cramer. New York.

Schultes, Richard Evans. 1971. (Bk. Rev.). *Journal of Psychedelic Drugs* vol. 3(2):104-105. Spring. A review of R. Gordon Wasson and Wendy Doniger O'Flaherty's "[Soma: Divine Mushroom of Immortality](#)".

----- 1976. Fly agaric mushrooms. *Hallucinogenic Plants*:24-27. A Golden Garden Guide. Golden Press. New York.

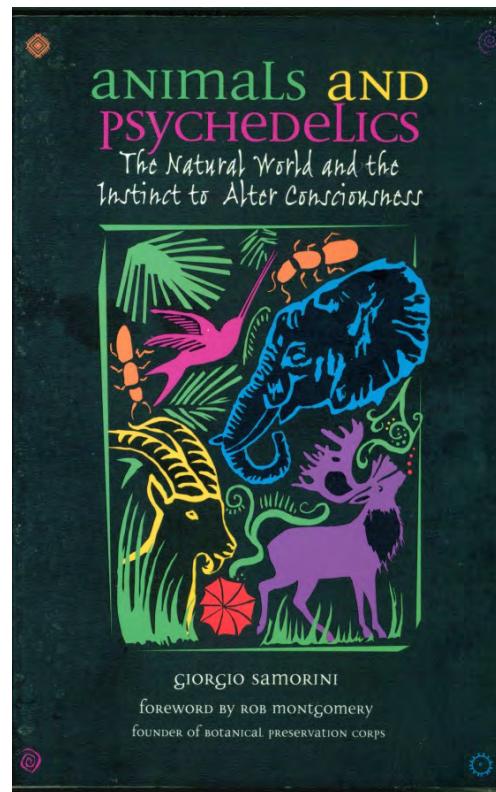
Schultes, Richard Evans and Albert Hofmann. 1979. Mainstay of the Heavens. *Plants of the Gods*:82-85. McGraw-Hill Book Co. New York.

Schultes, Richard Evans and Albert Hofmann. 1973. *The Botany and Chemistry of the Hallucinogens*. C. Thomas. Springfield. 2nd edition 1980.

See Revised edition by Schultes, R. E., Hofmann, A. and Christian Rätsch. 1998. This is an updated version whereas Christian Rätsch was added as a co-author and editor.

Schurr, Theodore G. 1995. Aboriginal Siberian use of *Amanita muscaria* in shamanistic practices: Neuropharmacological effects of fungal alkaloids ingested during trance induction, and the cultural patterning of visionary experience. *Curare Col.* 18(1): 31-65.

Scotti de Carolis, A., Lipparini, F., and V. G. Longo. 1969. Neuropharmacological investigations on muscimol, a psychotropic drug extracted from *Amanita muscaria*. *Psychopharmacologia* vol. 15:189-195.



Sirakawa, K., Aki, O., Tsushima, S., and K. Konischi. 1966. Synthesis of ibotenic acid and 3-deoxyibotenic acid. *Chemical and Pharmacological Bulletin of Japan* vol. 14:89.

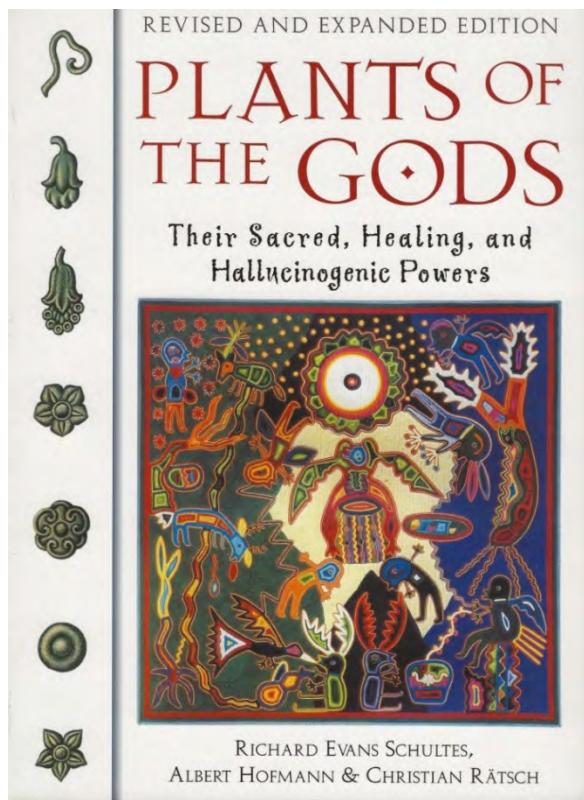
Siimets, Ülo. 2006. The Sun, the Moon and Firmament in Chukchi Mythology and on the Relations of Celestial Bodies and Sacrifices. *Electronic Journal of Folklore. Estonian Folklore Vol.* 32:129-156.
[doi:10.7592/fejf2006.32.siimets](https://doi.org/10.7592/fejf2006.32.siimets).

Sijunin, Nikolai Vasil'evich. 1900. *The Okhotsko-Kamchatskii Kraj. An Essay in Natural History* vol. 1:654-655. In two volumes. St. Petersburg.
The purported sale and trading of the fly-agaric among some Koryak natives is suggested. See R. Gordon Wasson and Wendy Doniger O'Flaherty's "[Soma: Divine Mushroom of Immortality](#)":260-261.

Smythies, J. R. 1960. (Bk. Rev., News Item). Fungus and foresight. *Sunday Times*. London, New York. March 13. New York.

A review of Andrija Puharich's [The Sacred Mushroom](#).

Snodgrass, S. R. 1978. The use of [3C] muscimol for GABA receptor studies. **Nature** (London) vol. 273:392-394.



Stafford, Peter. 1977. Fly agaric, panther caps, and Soma. *Psychedelic Encyclopedia*. Revised 1982 edition.

----- 2003. *Magic Mushrooms*. Ronin Publishing. Oakland, California.

The chapter on *Amanita muscaria* has been extracted from Peter Stafford's *Psychedelic Encyclopedia*. With 30 new pictures by John W. Allen. .

Steller, G. W. 1774. *Description of Kamchatka, its inhabitants, their Customs, Names, Way of Life, and Different Habits*:92-93. Leipzig.

The shamanic use of the fly-agaric among the Koryak and Yukagir reindeer herdsmen is described. See R. Gordon Wasson and Wendy Doniger O'Flaherty's "[Soma: Divine Mushroom of Immortality/ Pages:](#) 239-240.

Stijve, Tjakko. 1982. Het voorkomen van muscarine en muscimol in verschillende paddenstoelen. **Coolia** vol. 25(4):94-100.

In German.

----- 1998. Tenure en chlorures et bromures des champignons supérieurs. *Bulletin Trimestriel de la Federation Mycologique Dauphiné-Savoie* vol. 148:16-21.

Comparison of some trace elements in various species of fungi, including *Amanita muscaria*. In French.

----- 2000. De Koningsvliegezwam, Amanita Regalis (Fr.) Michael, de Paddenstoel van het jar 2000 (The Royal fly agaric, the mushroom of the year 2000). *Antwerpse Mycologische Kring (AMK) Mededelingen* vol. 2:46-53.

A communications of the Antwerp (Belgium) Mycological Society. *Amanita regalis* (Fr.) Michael, the Royal fly agaric, is a rare species that the German Mycological Society has nominated as the "Mushroom of the Year 2000." The scarce literature on *A. Regalis* is reviewed in some detail. In addition, a number of poisoning cases attributed to this mushroom in old and modern literature are reviewed and discussed. Chemical analyses of 4 Swedish collections revealed that this species contains considerable amounts of ibotenic acid/muscimol, the same toxic principle as reported in the ordinary fly agaric, *A. muscaria*. On the other hand, *A. regalis* was found to be exempt of muscarine and tryptamine derivatives. The Royal fly agaric is chemically close to *A. muscaria*. Both mushrooms distinguish themselves from *A. pantherina* - which contain the same toxins - by their remarkably high vanadium- and selenium content. In Dutch.

Strahlenberg, Filip Johann von. 1736. *An Historico-Geographic Description of the North and Eastern parts of Europe and Asia; But more Particularly of Russia, Siberia, and Great Tartary; etc.* London. Second printing, 1738.

This is an account of a Swedish Colonel who spent 12 years in Siberia as a prisoner of war. The Colonel presents his personnel observations on the use of fly-agaric amongst the Koryak tribesmen (See R. Gordon Wasson and Wendy

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Doniger O'Flaherty's "Soma: Divine Mushroom of Immortality" 234-235). Originally published in Stockholm in 1730. Also translated into French. See page 397 of the English edition.

Subbaratnam, A. V. and W. B. Cook. 1963. Subsidiary constituents from *Amanita muscaria*. *Journal of Medicinal Chemistry* vol. 6:448-449.

Takemoto, T., Nakajima, T. and R. Sakuma. 1964a. Structure of Ibotenic Acid. *Yakugaku Zasshi* 84:1232-1233.

Takemoto, T., Nakajima, T., and R. Sakuma. 1964b. Isolation of a flyicidal constituent: Ibotenic acid from *Amanita muscaria* and *Amanita pantherina*. *Yakugaku Zasshi* vol. 84(12):1233-34.

Takemoto, T., Yokobe, T., and T. Nakajima. 1964c. Studies on the constituents of indigenous fungi II: Isolation of the flyicidal constituent from *Amanita strobiliformis*. *Yakugaku Zasshi* vol. 84(12):1186-1188.

Talbot, E. and L. C. Irving. 1963. Pigments and other extractives from *Amanita muscaria*. *Canadian Journal of Botany* vol. 41:639.

Terradas, F. and H. Wyler. 1991. 2, 3-and 4, 5-secodopa, the biosynthetic intermediates generated from L-Dopa by an enzyme system extracted from the fly agaric, *Amanita muscaria* L., and their conversion to muscaflavin and betalamic acid, respectively, and betalains. *Helvetica Chimica Acta* vol. 74:124-140.

Theobald, W., Buch, O., Kunz, H. A., Krupp, P., Stenger, E. G., and H. Heimann. 1963. Pharmakologische und experimental psychologische untersuchungen des inhaltsstoffen des fliegenpilzes (*Amanita muscaria*). *Arzneimittel-Forschung* (Drug Research) vol. 18:311-315.
In German.

Toro, Gianluca. 2009. (CD-ROM). *Alberi-fungo e funghi nell'arte cristiana [Mushroom-Trees and Mushrooms in Christian Art]*. Publishing House: self-distributed CD, under the logo "Mamatèra" ("Mother Earth"), Italy.
An impressive investigation and study of the presence and meaning of historical mushroom representations in general and of the so-called "mushroom-trees" in particular - in ancient Christian art. Such images seem to be inspired by

naturalistic models of psychoactive mushrooms. Based on this fact, the aim of the book appears to gather and comment on the available iconographic historical documentation, following the symbolism showed in the images themselves, without forcing the research towards predefined results. Many of these images have been classified according to the main types as "mushroom-trees", "naturalistic" and "symbolic-schematic", also pointing out the presence of other models. The first part of the CD-ROM deals with the history of the research, proposes some ethnomyco logical data of the main psychoactive European mushroom species and a review of the symbolic elements related to the mushrooms in general. The author then details the iconographic evolution from tree, to mushroom-tree and finally to show how the various mushrooms are outlined, and provides a possible meaning for the mushroom images often recognized in Christian art. The second part deals with the classification and commentary of the many variations of the available images, classified according to the types noted above. By means of such iconography, it is probable that the many artists represented on canvas, a precise symbolic meaning of the mushrooms in a more or less conscious and hidden way. "It is possible to interpret such messages considering the morphology of the mushroom images, the context in which they appear and their relationship to other elements in the scene, but also the relationship of man with symbols and their meaning" and with the idea of the sacred. In the long run, the mushroom images in Christian art could be derived from ancient religious and philosophical lifestyles and esoteric traditions, where mushrooms had played a certain role in religious societies. This could explain that certain Christian culture had absorbed such knowledge, in representing the "mycological message" in the iconography as shown in this study. Lavishly illustrated. For recent related literature, see [Gosso & Camilla](#), 2007.
In Italian.

Trotsky, Leon. 1890. Why do men stupefy themselves. In: *Drunkeness*:185-203. by Dr. P. S. Alexyev.
The above essay was written as a preface to a book on drunkenness. In this essay, Trotsky talks about intoxications from the ingestion of opium, ether, vodka, wine, beer, hashish, morphine, tobacco and the fly agaric mushroom *Amanita muscaria*.

Tyler, Varro E. 1958. Pilzatropine, the ambiguous alkaloid. *American Journal of Pharmacology* vol. 130:264-269.

Tyler, Varro E. 1966. The physiological properties and chemical constituents of some habit-forming [sic]

plants: Soma-Haoma, divine plant of the ancient Aryans. *Lloydia* vol. 29(4):284.

Tyler, Varro E. and D. Gröger. 1964a. Investigation of the alkaloid of *Amanita* species. I. *Amanita muscaria*. *Planta Medica* vol. 12:334-339.



Gianluca Toro. 2009. CD-ROM. Lavishly Illustrated.

Tyler, Varro E. and D. Groger. 1964b. Investigation of the alkaloid of *Amanita* species. I. *Amanita citrina* and *Amanita porphyria*. *Planta Medica* Vol. 12:397-402.

Unsigned A. *The Rig Veda*: Mandala No. 9. Penguin Books. Middlesex, England.

Unsigned B. *The Rig Veda*: Mandala No. 10. Penguin Books. Middlesex, England.

Unsigned. 1975. (Mag.). Teonanácatl: Flesh of the gods. *High Times* vol. 1(4):34-35. Spring.

A centerfold photograph describes *Amanita muscaria* as the *Teonanácatl* of the Aztec empire.

Unsigned. 1975. (Mag., letters). Manita mushroom: Uneeda cure. *High Times* vol. 6:8. October-November. Inquiries regarding *Amanita muscaria*. See next two entries.

Unsigned. 1977. (Mag., letters). Muscaria muddle. *High Times* vol. 18:8. February.

Unsigned. 1977. (Mag., letters). Sometime love. *High Times* vol. 21:12. May.

Unsigned. 1979. *High Times* vol. 44. April. This issue of *High Times* features a photograph of *Amanita pantherina* with the caption: "Psilocybin 'shrooms: eminently safe."

Unsigned. 1988. (Mag.). Mushroom alert [regarding *Amanita muscaria*]. *High Times* vol. 157:20. September.

Unsigned. 1994. That Old Mushroom Magic. (News Item). *The Electronic Telegraph*, December 22. *Science*. 3p. A report on the association of Santa, Christmas and *Amanita* mushrooms.

Van Renterghem, Tony. 1985. *When Santa Claus was a Shaman*. Llewellyn Publications. Woodbury, MN. This work explores the origins of Santa Claus, going back to prehistoric times and man's earliest concepts of religion. It analyzes how ancient myths from countries as diverse as Britain, Russia, Scandinavia, Spain and Africa were adapted, sanitized and commercialized in modern times by America. About the Author Tony van Renterghem (Netherlands) works as a semi-retired writer, researcher and consultant. He was born in Amsterdam and served in the Resistance during World War II, was condemned to death by the Nazis and escaped. For 30 years he worked in the movie industry, where he was technical advisor on such films as "The Diary of Anne Frank" and "The Greatest Story Ever Told."

Vanderlip, Washington B. 1903. *In Search of a Siberian Klondike*:214-215. New York. According to Wasson, this account of the shamanic use of the fly-agaric mushrooms in the Koryak village of Kaminaw may have been plagiarized from Stepan Krasheninnikov's 1755 book Description of Kamchatka Land. See R. Gordon Wasson and Wendy Doniger O'Flaherty's "[Soma: Divine Mushroom of Immortality](#)" :264.

Verduci, Paolla. 1945. Sui caratteri differenziali delle sostanze tossiche contenute nei funghi velenosi della Calabria e della Sicilia e sulle difficoltà del loro isolamento. *Boll. Soc. Ital. Biol. Sper.* vol. 20:259. Describes *Amanita muscaria* and *Amanita pantherina* from Sicily. In Italian.

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Waddington, J. L., and A. J. Cross. 1979. Baclofen and muscimol: Behavioral and neurochemical sequelae of unilateral intranigral administration and effects on [3C]-GABA receptor binding. *Naunyn-Schmiedeberg's Archives of Pharmacology* vol. 306(3):275-280.

Waldschmidt, Eberhard. 1992. Der fliegenpilz als heilmittel. *Integration: The Journal For Mind Moving Plants and Kultur* vol. 2-3:67-68.

This article describes the fly-agaric mushroom as a pharmacological medicine, available in Germany. It is prescribed for depression, paresis of the bladder, mental weakness and as an incentive.

In German.

Walker, R. J., Woodruff, G. N., and G. A. Kerkui. 1971. The effect of ibotenic acid and muscimol on single neurons of the snail, *helix aspersa*. *Comparative and General Pharmacology* vol 2:168.

Wang, R. Y., Salvaterra, P. and E. Roberts. 1979. Muscimol binding to mouse brain membranes. *Biochem. Pharmacology* vol. 28:1123-1128.

Waser, Peter G. 1958. Structure and activity of muscarine and muscarone and their stereoisomers. *Experientia* vol. 14:356-358.

Waser, Peter G. 1960. Structure and action of muscarine-like compounds. *Experientia* vol. 16:347.

Waser, Peter G. 1961a. Structure dependence of the action of muscarine-like compounds. *Experientia* vol. 17:300.

Waser, Peter G. 1961b. Chemistry and pharmacology of muscarine, muscarone, and other related compounds. *Pharmacology Reviews* vol. 13:465-515.

Waser, Peter G. 1967. The pharmacology of *Amanita muscaria*. In: David H. Efron's (ed.) *Ethnopharmacological Search for Psychoactive Drugs*:419-439. United States Public Health Service Publication No. 1645. United States Government Printing Office. Washington, D. C.

Waser, Peter G. 1970. Turnover of monoamines in brain under the influence of muscimol and ibotenic acid, two new psychoactive principles of *Amanita muscaria*. In: Efron, D. (Ed.) *Psychomimetic Drugs*:155-

161. Raven Press. New York.

Waser, Peter G. 1971a. A pharmakologische wirkungsspektren von halluzinogenen. *Bulletin der Schweizer Akademie Medzinische Wissenschaft* vol. 27:39-57.

In German.

Waser, Peter G. 1971b. Pharmakologie der halluzinogene. *Praxix* vol. 60:1001-1005. Rundschau Med Schweiz.

In German.

Waser, Peter G. and Petra Birsen. 1970. Turnover of monoamines in brain under the influence of muscimol and ibotenic acid-two psychoactive principles of *Amanita muscaria*. In: David H. Efron's (ed.) *Psychomimetic Drugs*:155-162. Raven Press. New York.

Wasson, R. Gordon. 1960. Lightning bolt and mushrooms: An essay in early cultural exploration. *Antiquity and Survival* vol. 3(1):59-73.

In Dutch. Revised and amplified version of original. Originally in: *For Roman Jakobson: Essays on the Occasion of his 60th Birthday, October 11, 1956*:605-612. In Dutch. Mouton & Company. The Hague. This paper also appeared in [Persephone's Quest: Entheogens and the Origins of Religion](#). This was Gordon Wasson's first publication in ethnomycology.

Wasson, R. Gordon. 1964. The divine mushroom of immortality. In Peter T. Furst's 1972 edition of *Flesh of the Gods*:185-182. Prager Pub., Inc.

Wasson, R. Gordon. 1967. Fly agaric and man. In: Efron, David H., Holmstedt, Bo., and N. S. Kline (eds.) *Ethnopharmacological Search for Psychoactive Drugs*:405-414. NIMH Workshop Series No. 2. Dept. of Health, Education and Welfare. United States Public Health Service Bulletin No. 1645. U. S. Government Printing Office. Washington, D. C.

Wasson, R. Gordon. 1968. *Soma: Divine Mushroom of Immortality*. Ethno-Mycological Studies No. 1. Mouton and Co. The Hague, Netherlands. Harcourt Brace Jovanovich. New York.

Limited half-leather bound edition of 680 copies (40 illustrations, including 3 maps, 1 chart, 2 watercolors, and 18 colored tipped-in plates. In 1970 a trade hard-cover and paperback facsimile edition appeared in print (original

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photographs but not tipped-in. Three printings of the trade edition followed. A Deluxe first edition, in slipcase xiv + 381 + [i colophon] pages. Ethno-myco logical Studies No. 1 of the Botanical Museum of Harvard University. Colophon page reads, "Of this book 680 copies have been made, designed by Giovanni Mardersteig and set in Dante type, of which two are designated A & B and the others are numbered 1 to 678. Text and illustrations were printed by the Stamperia Valdonega in Verona, except for two plates in pochoir, which were executed in Paris by Daniel Jacomet et Cie. The paper was hand-made by Fratelli Magnani, Pescia, and the printing completed in 1968." Contents: Three parts: 1. Soma: Divine Mushroom of Immortality, 2. The Post-Vedic History of the Soma Plant by Wendy Northern Eurasia and the Tree of Life and the Marvelous Herb, acknowledgements, exhibits and index consisting of 47 items divided into 2 sections: I. The Fly-Agaric in Siberia, II. The Fly-Agaric in Scandinavian Writings, citations from the Rg Veda, index. List of illustrations-22 plates, list of 10 illustrations in the text, list of 4 maps and linguistic chart accompanying part 3.

Wasson, R. Gordon. 1970a. Soma: Comments inspired by Professor Kuiper's Review of R. Gordon Wasson and Wendy Doniger O'Flaherty's Soma: Divine Mushroom of Immortality. *Indo-Iranian Journal* vol. 12(4):286-298. **Kuiper's review immediately precedes the reply in the same issue.**

Wasson, R. Gordon. 1970b. Soma of the Aryans: An ancient hallucinogenic. *Bulletin on Narcotics* vol. 22(3). A United Nations Publication. July-September. Also published in French as "*Le Soma des Aryans: un ancien hallucinogène.*" *Bulletin des Stupeiants* vol. 22(3). Also in *Journal of Psychedelic Drugs* vol. 3(2):40-46. Spring 1971. Later reprinted in *Psychedelic Review* 1971.

Wasson, R. Gordon. 1971. The Soma of the Rig Vida: What was it? *Journal of the American Oriental Society* vol. 91(2):169-187. April-June. Also: Remarks of Mr. Wasson's Soma by Daniel H. H. Ingalls. Both reprinted in *Journal of the American Oriental Society* as No. 7. Also in: *The Spanish Journal Plural* in 1976.

Wasson, R. Gordon. 1972a. The divine mushroom of immortality. In Peter T. Furst' (ed.) *Flesh of the Gods*:185-200. Praeger. New York.

Wasson, R. Gordon. 1972b. What was the Soma of the Aryans. In Peter T. Furst' *Flesh of the Gods*:201-213.

Wasson, R. Gordon. 1972c. *Soma and the Fly Agaric:*

Mr. Wasson's Rejoiner to Professor Brough. Cambridge, Massachusetts. Ethnomycological Studies No. 2.

Wasson, R. Gordon. 1976. Soma: The divine mushroom of immortality. *Discovery* vol. 3(1):41-48. Fall.

Wasson, R. Gordon. 1979a. Traditional use in North America of *Amanita muscaria* for traditional purposes. *Journal of Psychedelic Drugs* vol. 11(1-2):25-28. January-June. Congress on Hallucinogens and Shamanism in Native American Life. San Francisco, California. November 1978.

Wasson, R. Gordon. 1979b. Soma brought up to date. *Botanical Museum Leaflets of Harvard* vol. 26:211-223. June 30.

Also in: *Journal of the American Oriental Society* vol. 99(1):23-35. 1979.

Wasson, R. Gordon. 1995. Ethnomycology: discoveries about *Amanita muscaria* point to fresh perspectives. In: Schultes, R. E. and S. von Reis [Editors]. *Ethnobotany, Evolution of a Discipline*: 385-390. Dioscorides Press. Portland.

Wasson, R. Gordon. 2002a. The Miskwedo of the Ahnishinaubeg. In: Hoffman, Mark. (Ed.) *Entheos, The Journal of Psychedelic Spirituality* vol. 1(2):3-12. June. 200 copies.

Previously unpublished, from the Harvard University Botany Libraries, Tina & R. Gordon Wasson Ethnomycological Collection Archives and is presented here by kind permission of Wasson's daughter and executor, Dr. Masha Britten. The MS is a chapter from an abandoned work in progress, typewritten, with hand corrections by RGW. It bears the subtitle, Ten Extraordinary Tales and was written about 1980. The Text, as published here {in the article} is complete, with certain deletions noted in the footnotes. Wasson met Keewaydinoquay in 1975 through Professor John Nichols of the University of Wisconsin. Kee agreed to divulge tribal traditions to him and painted a birch bark scroll to illustrate her narrative of the "Sun Mushroom Tale." It and this commentary were not to be published until fifty years after her death because she feared the jealousy of rival shamans and her peoples ostracism.

Wasson, R. Gordon. 2002b. (Letter). Mr. R. H. Gold, Easter, 1965. In *Entheos: The Journal of Psychedelic Spirituality* Vol. 2(1):3.

A letter written to Mr. Gold regarding Soma and other suspected healing drug/plants. Letter is dated April 18,

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Easter Sunday, 1965. Permission to print this letter in the journal *Entheos* was granted by Dr. Masha Wasson, Gordon's daughter.

Wasson, R. Gordon with Wendy Doniger O'Flaherty. 1968. *Soma: Divine Mushroom of Immortality*. Harcourt Brace. New York. Ethnomycological Studies No. 1. A pre-history of the Soma complex by which R. G. Wasson suggests that the Soma of the ancient Vedic Hymns is actually the mushroom *Amanita muscaria*.

Wasson, R. Gordon et al. 1980. Unpublished manuscripts. (From [Ott](#), 1993).

"The Miskwedo of the Ahnishinaubeg" by Keewaydinoquay; "Supporting Evidence" by R. Gordon Wasson; "A Mushroom Ceremony" by R. Kaplan. The three printed and bound copies of this rarest piece of Wassoniana are locked up in the Houghton Rare Book Library at Harvard University until the year 2020 (Schultes, 1992; Personal communications with Jonathan Ott). "Since Wasson sent me copies of these three manuscripts for the book during its writing, these were available for examination. The three printed books contain a reproduction of a hand-painted scroll made by Keewaydinoquay, the original of which Wasson showed me, detailing the Ahnishinaubeg folk stories regarding *Amanita muscaria*, and the book features a series of Ahnishinaubeg tales in which the sacred mushroom figures. Wasson's introductory chapter, "Supporting Evidence" is substantially similar to the paper he published in the *Journal of Psychedelic Drugs* (Wasson, 1979a), being the lecture he gave at a 1978 conference in San Francisco, in which Keewaydinoquay, M. Perchel and Reid Kaplan also participated."

Watiaux, Vincent. 2002. Two paintings by J. M. W. Turner: An entheobotanical interpretation. In: Hofmann, Mark (Ed.), *Entheos, The Journal of Psychedelic Spirituality* vol. 2(1):63-73.
In which the author makes a suggestion as to the reasons Turner had painted images of the *Amanita muscaria* mushrooms found in some of Turner's paintings. For related information see [Hoffmann & Ruck](#), 2002b.

Weil, Andrew. 1980. *Mushrooms. The Marriage of the Sun and Moon*. Houghton-Mifflin. Boston.
This excellent book on entheogenic plants also has devoted three chapters on the sacred mushrooms and their recreational use. For further information see [Weil](#), 1980a, 1980b, 1980c and 1980d.

Wells, H. G. 2000. The Purple Pileus (Der purpurrote Pilzhut). In: Bauer, Wolfgang, Klapp, Edzard and

Alexandra Rosenbohm's *Der Fliegen Pilz*:146-153. *Traumkult, Märchenzauber, Mythenrausch*. AT Verlag, Aarau, Schweiz, Germany.

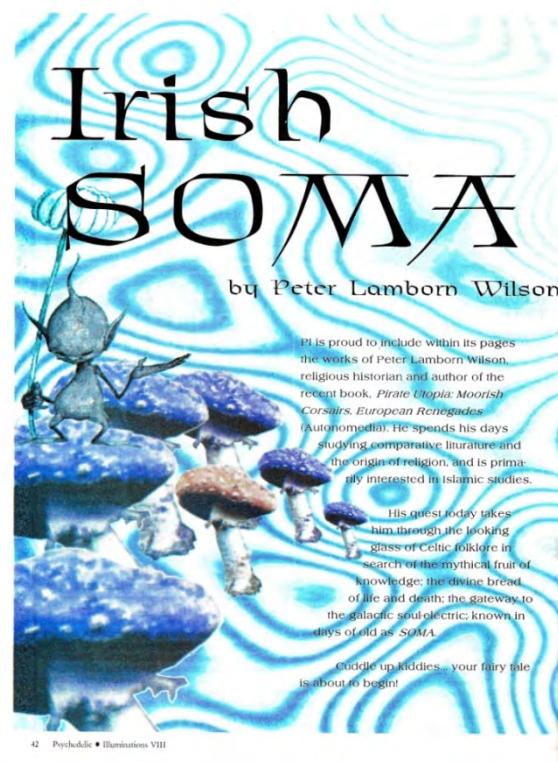
'The Purple Pileus' - a novel written in 1894: The metamorphosis of a sober businessman into a successful one thanks to the consummation of fly agaric. This initiation reminds of the role of the red felt hat without brim called "pileus" in Ancient Rome: a (by his master freed) man announced by this piece as no longer to be a slave.

Wilkinson, S. 1961. The history and chemistry of muscarine. *Rev. Chem. Soc.* vol. 15:153.

Wilson, Peter Lamborn. 1995. *Query: Irish Soma?* Unpublished manuscript.

This manuscript deals with a hypothesis about "Soma" in Irish Culture. This is part one of a book sent to the authors. Part two deals with a detailed comparison of the Rig Veda and Irish folklore. The book is supposed to be published by City Lights. See below next listing.

Wilson, Peter Lamborn. 1995-1996. *Irish Soma. Psychedelic Illuminations* vol. VIII:42-47.
His quest today takes him through the looking glass of Celtic folklore in search of the mythical fruit of knowledge: the divine bread of life and death; the gateway to the galactic soul electric known in days of old as SOMA.

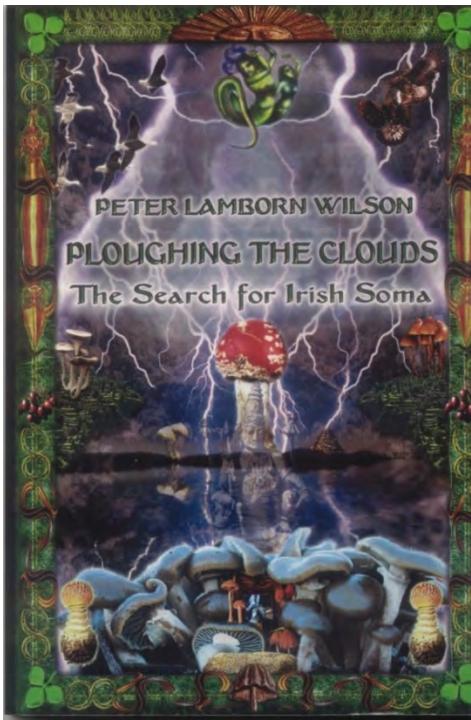


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Psychedelic Illuminations Vol. VIII. 2995-1996.

-----, 1999. *Ploughing the Clouds: The Search for Irish Soma*. City Lights Books. San Francisco, Ca.

According to Terence McKenna, This book "brings new perspectives to the problem of Soma and broadens and deepens the context of its discussion. Information on possible Celtic relationships with psychoactive plants and fungi are most welcome."



Cover of Peter Lamborn Wilson's Book on Irish Soma.

Wohberg, Joseph. 1990. Haoma-Soma in the world of ancient Greece. *Journal of Psychoactive Drugs* vol. 22(3):333-342.

Worms, P., Depoortere, H., and K. G. Lloyd. 1979. Neuropharmacological spectrum of muscimol. *Life Sci.* ol. 25:606-614.



A Hand-Painted *Amanita muscaria* T-Shirt designed by John W. Allen and painted with acrylics by Wipaporn of Ban Nathon, Koh Samui Island, Thailand. Oct 2005.

Below:
The Author Admiring his friends of the Earth. Seattle.



John W. Allen Admiring *Amanita muscaria* in Laurelhurst District, Seattle, Washington. Circa October of 2019.

An Art Gallery Devoted to *Amanita Muscaria*
By
John W. Allen

Herein is a single publication regarding *Amanita muscaria* not included in the above Allen's Compendium of the Neurotropic Fungi Part I. Also included are photographs of *Amanita* species taken in Seattle, Washington between 1976 through December of 2018. Additionally the author has added several CGI graphic images of his photographs of *Amanita* created between 1997-2018, as well as some artistic interpretations of *Amanita* for those who want to stimulate their visionary attributes.

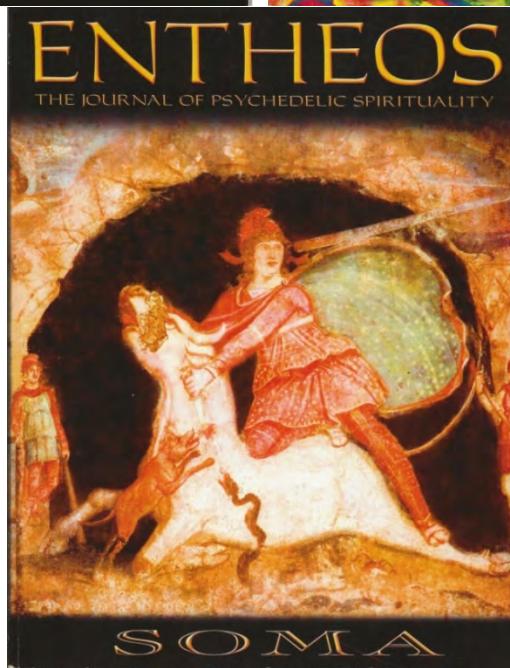
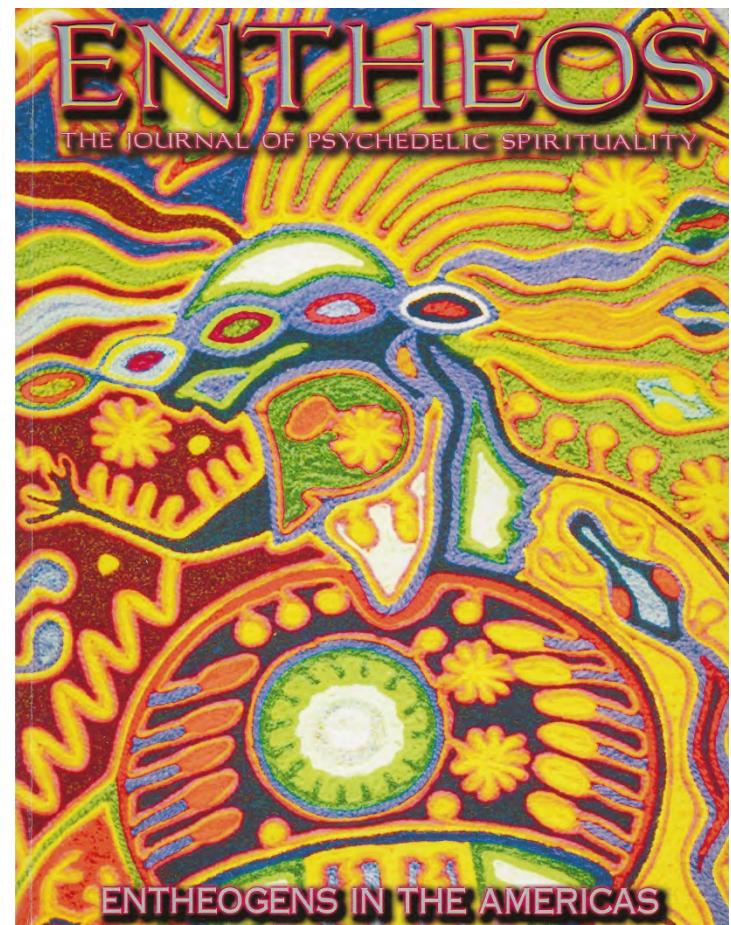
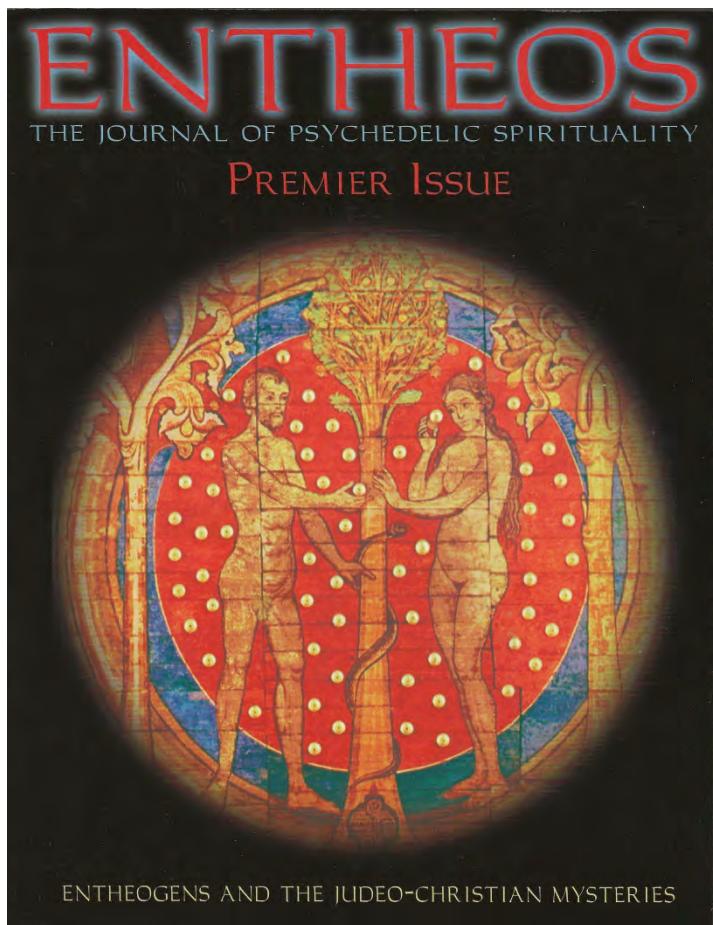
The first presentations here were supposed to be included in the Compendium but space was limited so I have added these images because they are as important to the literature of the history of these mushrooms.

John W. Allen,
Seattle, Washington,
October 14, 2019.



Amanita muscaria photographed at a closed Naval Base hospital in Astoria, Oregon. Graphic rendition was achieved with Dreamscape Plug-Ins. Image 1 was Trippy Effect and Image 2 was Trippy Effect with an additional Plug-In with Mystery Flavor. These are part of my "Things one might see while under the influence of *Amanita muscaria*" series. On the following pages I have inserted images of books, magazines, and journal publications devoted to *Amanita muscaria* and some art I have created over the years.

Below: Mark Hofmann's three issue run Journal Devoted to *Amanita muscaria*.



Issues 1, 2, and 3 of Mark Hofmann's Entheos. A Journal on Psychedelic Spirituality.



no. 2 & 3

1992

integration

zeitschrift für geistbewegende pflanzen und kultur

journal for mind-moving plants and culture

herausgeber/editors : w. bauer, m. hanslmeier, l. e. luna, h. de vries

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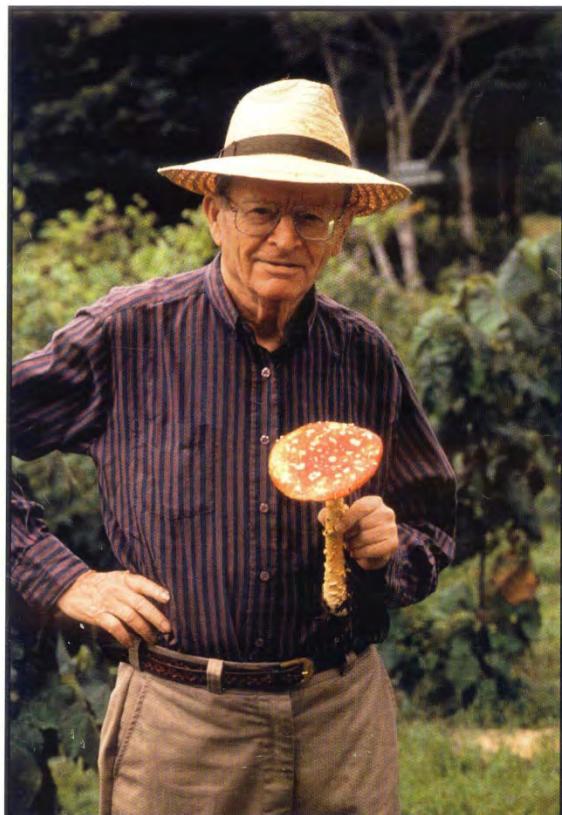
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Integration: The journal For Mind-Moving Plants and Culture Vol. 2-3. 1998.

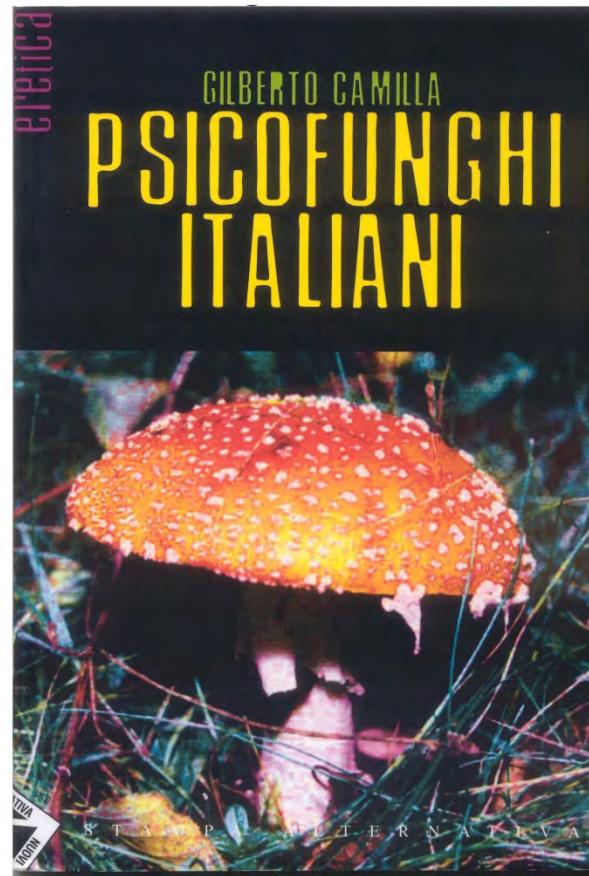
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Journal of American Amateur Mycology

Vol. 11 No. 2 1994 Published by the North American Mycological Association



ON the left is mycologist Rolf Singer,
Former Curator of the Chicago Field
Museum of Natural History. Below an
Italian field guide to the Sacred Fungi.



Amanita muscaria. Laurelhurst District of Seattle, Washington. Fall of 2017.



Amanita muscaria Greenlake, Seattle, Washington.



John W. Allen at the Royal Agricultural Research Station, Bangkok, Thailand. 2004.

More of my “Things one might see while under the influence of *Amanita muscaria*” series.



Alice in and Alice out. Dysmetropsia; an effect from *Amanita* inebriations.



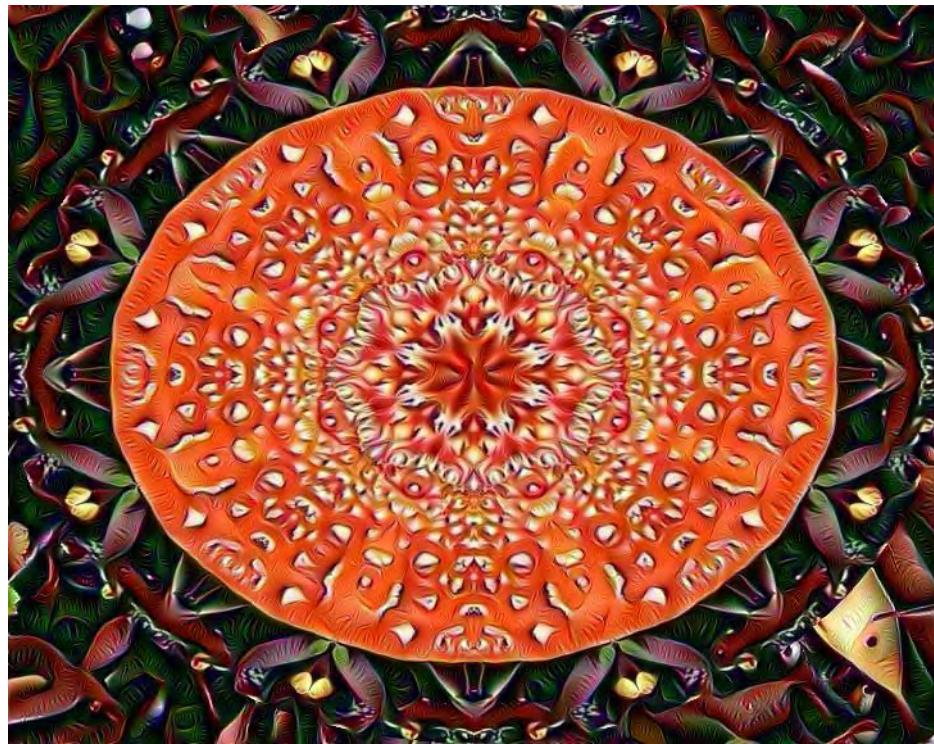
More of my “Things one might see while under the influence of *Amanita muscaria*” series. University of Washington, Seattle. 2014. Created in Dreamscape’s Trippy Effects Plus-In.



Seattle Arboretum. Dreamscape’s STMES (Self Transporting Machine Elves) Plug-In.



Amanita muscaria in a wooded area. University of Washington. Seattle. Dreamscope's Mystery Flavor Plug-In.



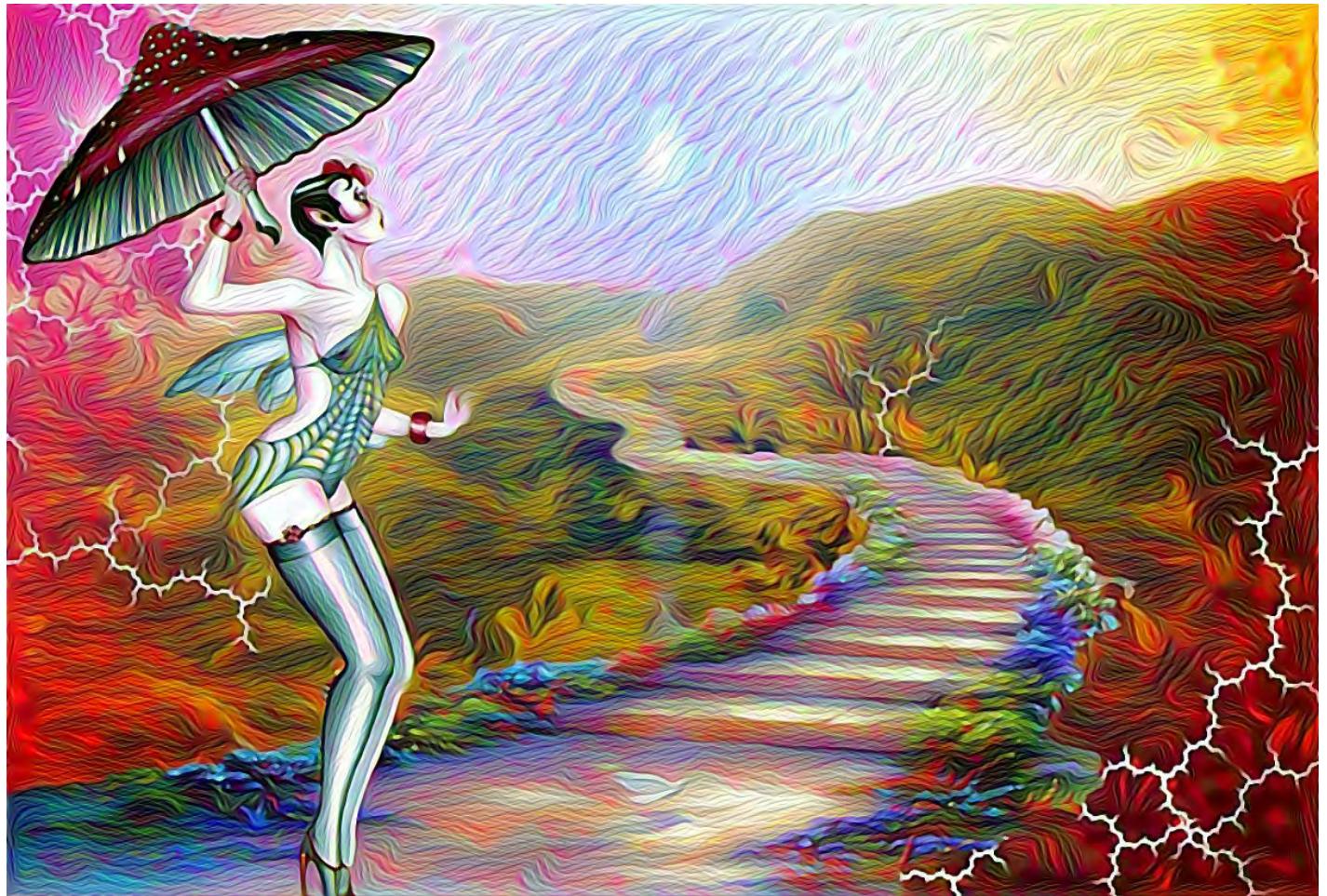
A fractal of *Amanita muscaria* in KPTS 5 and then Dreamscope's Mystery Flavor. Created from 4 fresh specimens of *Amanita muscaria*.



Amanita muscaria. Sandpoint, Seattle, Washington.



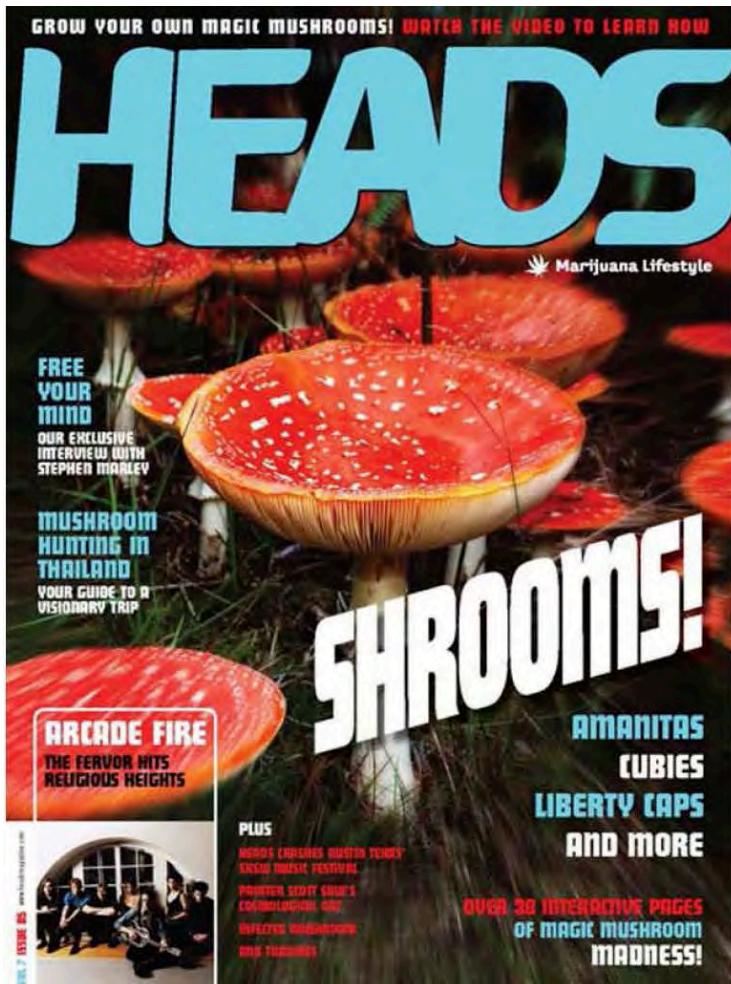
Shroom Girls of Changmai. Created from a photograph of the mountains near Fang, Thailand. I used a stairway from an art book and a cut-out girl from an old Esquire Magazine. I also added a lens flare, and lightening to create a Stairway to Heaven. Then I used the Dreamscape Trippy Effects Plug-In. One of 24 images in this series.



In this image I used the Angel Hair Plug-In from Dreamscape to get this effect.



Amanita muscaria near Lake City Way, Seattle, Washington. Big'un.



On the left, a mushroom issue of the Canadian magazine, Heads. On the right in KPTS 3, a graphic distortion with apologies to UK Artist, Patrick Woodroffe.



Photographed at the Royal Agricultural Research Station, Bangkok, Thailand. 1999.



Amanita regalis (Fr.) Michael. Finland. Photo: Courtesy of Tjakko Stijve.



Amanita pantherina. Photo by Fred K. Waldvogel. Courtesy of Tjakko Stijve.



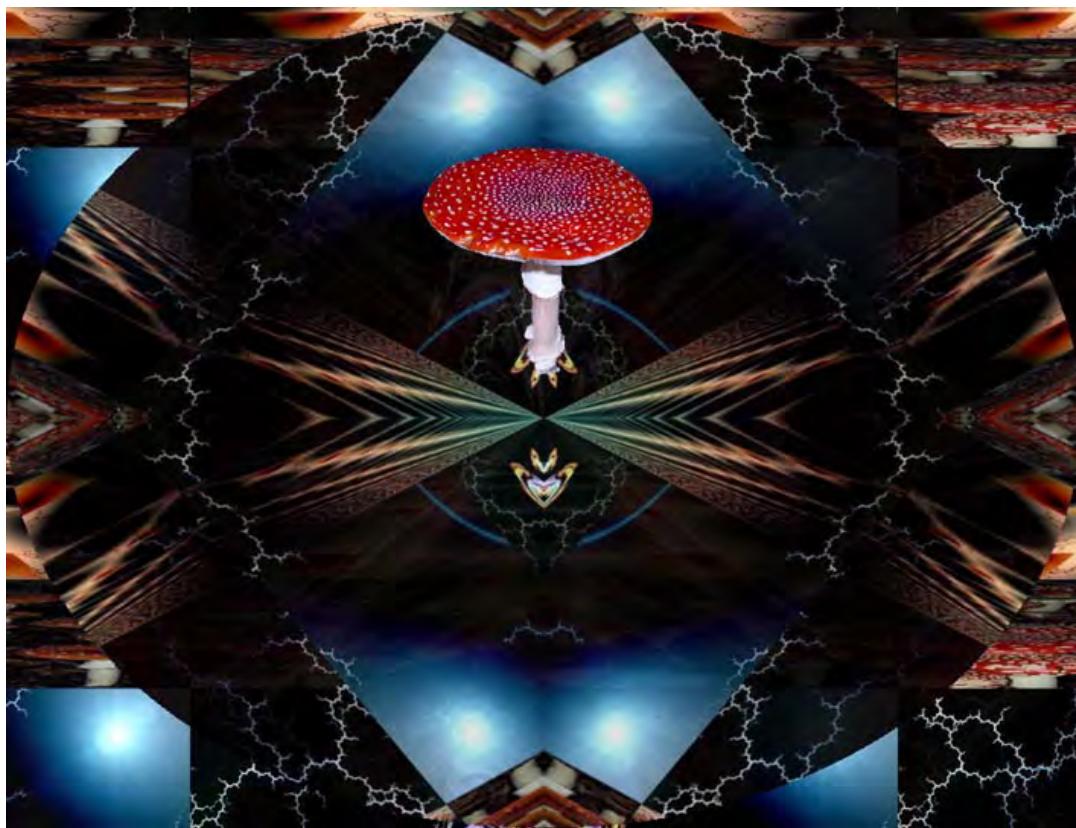
New born baby *Amanita muscaria*. University of Washington Horticultural Center. Seattle, Washington. Part of the author's "Things One Might See Under The Influence."



Amanita muscaria sculpted figurines in the Elements Smart Shoppe. Red Light District. Amsterdam.



An *Amanita muscaria* plaque in the Baba Smart Shoppe. Red Light District. Amsterdam.



Heavenly Halo: Mainstay of the Heavens. *Amanita muscaria* Graphic Art Photo Montage by the author.



A Silk batik designed by John W. Allen. Painted from a photo of a Thai Temple Ruins at Muang, Boran.



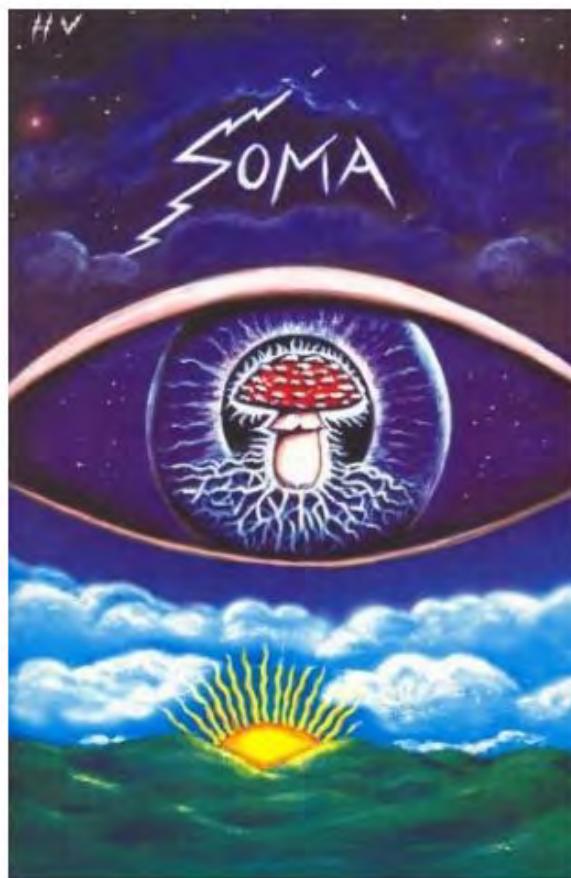
Very dark Crimson Red *Amanita muscaria*. Near University Village, Seattle, Wa.



The author with two large fresh specimens of *Amanita muscaria* in Laurelhurst, North Seattle, Wa.



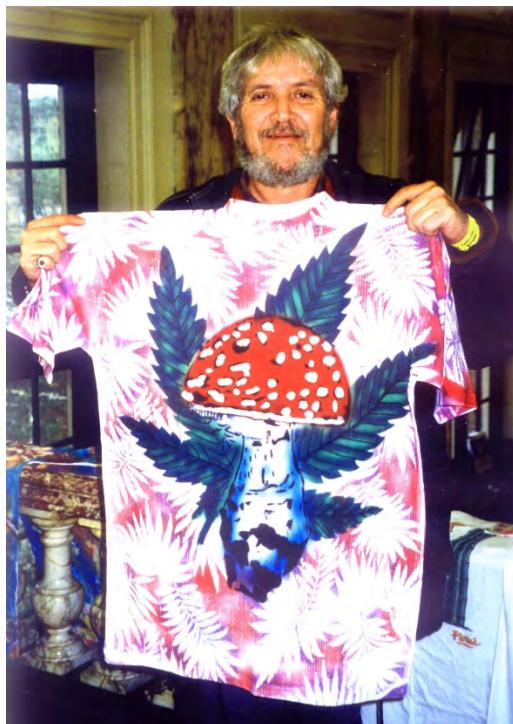
Amanita muscaria. Greenlake, North Seattle, Wa.



Book on *Amanita* Preparation by Venus and Hawk, renown internet *Amanita* mushroom shamans.



A beautiful red cap *Amanita* with Pine Needles on cap . University of Washington Campus, Seattle, Wa.



The author with *Amanita muscaria* T-Shirt. Tropen Museum, Psychoactivity 1998. Amsterdam.



A Photo Montage from a temple at Muang Boran, Thai Historical Site. Very Surreal.



Amanita muscaria display-With Dreamscape's Trippy Effect PSMS Annual Shroom Event.

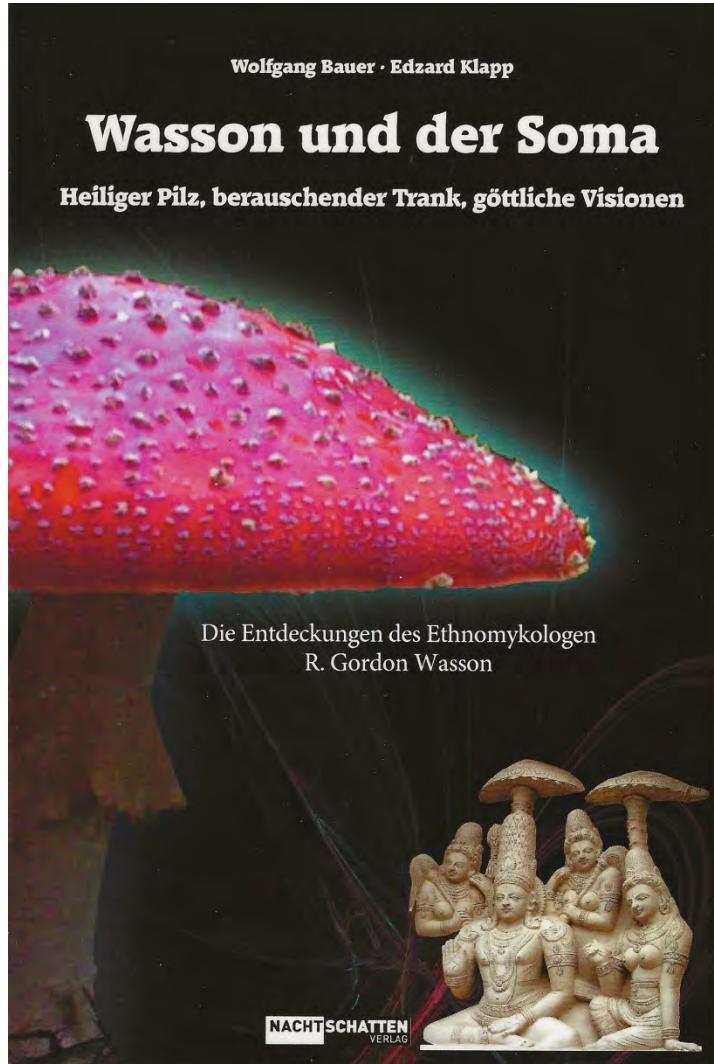


Amanita muscaria display-With Dreamscape's Trippy and Mystery Effect. PSMS. Annual Shroom Event.

LAST MINUTE ADDITIONS TO THE SOMA COMPENDIUM

Bauer, Wolfgang. 2012. *Wasson und der Soma: Heiliger Pilz, berauschender Trank, Göttliche Visionen.* Nachtschatten. Verlag, AG. Germany.

Die entdeckungen des Ethnomykologen R. Gordon Wasson.



Soma war der göttliche Rauschtrank der Ur-Arier, die vor etwa 3500 Jahren in Indien lebten. Generationen von Forschern versuchten, das Geheimnis des Soma anhand des Rig-Veda, einer uralten Sammlung von Zauberhymnen, zu ergründen; erst 1968 identifizierte der Forscher R. Gordon Wasson die sagenumwobene Götterpflanze als den im Schamanenkult zahlreicher Völker verwendeten Fliegenpilz.

Die Fliegenpilzexperten Wolfgang Bauer und Edzard Klapp präsentieren in diesem Buch zwei erstmals ins Deutsche übersetzte zentrale Kapitel aus R. Gordon Wassons klassischem Werk *SOMA: Divine Mushroom of Immortality* (SOMA – der göttliche Pilz der Unsterblichkeit) sowie eine Zusammenfassung des gesamten Werkes. In begleitenden Texten berichten die Autoren über Wassons meisterhafte Entschlüsselung der geheimen Rauschpflanze der Ur-Arier und zeigen die revolutionäre Bedeutung von Wassons Werk für das Verständnis des Ursprungs von Mythen, Religionen und Ritualen.



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Amanita muscaria. Photo: Courtesy of Raiky Garcia. Tasmania.



From a painting on the wall of Beauty and the Books (University Used and Rare Books), Seattle's University District, Seattle, Washington. Circa 1984. Unknown artist.



Close-up from a painting on the wall of Beauty and the Books (University Used and Rare Books), Seattle's University District, Seattle, Washington. Circa 1984. Unknown artist. See Above Image.



Joel-Antonio- Ckoobs- Barbaridades-Amanita muscaria. –Jalisco, Mexico.

FiN

Short Communication

A Case of Involuntary *Amanita pantherina* Intoxication in 1956 and the Secrets of Saint Catherine of Genoa (1447-1510).

By
Giorgio Samorini

In the course of the endless bibliographical research which often leads to genuine discoveries or to the detection of studies which lie buried and are forgotten by present-day research workers, I recently chanced upon an article dated 1956 which describes a case of intoxication by mushrooms. Due to the patient's pattern of symptoms, the latter was treated by two psychiatrists of the Psychiatric Clinic in Rome and the relevant report was published in *Revista Sperimentale di Freniatria*,¹ i.e. a field which is very far removed from the bibliographical network of reference on mycology and ethnomycology. Indeed, this article is not mentioned in any list of the most important Italian studies on psychotropic or poisonous mushrooms.



Fig. 1. *Amanita pantherina*. Photo: Fred-K-Waldvoger. Courtesy of Tjakko Stijve.

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The mushroom, which was responsible for the poisoning, was identified as *Amanita pantherina* (DC:Fries) Krombh., i.e. the variety that is closest to *Amanita muscaria* (Fr.) Hooker in both appearance (it also has a hat with little whitish spots) and chemical content and psycho-variety is more powerful than *A. muscaria*. At present, in some North American States, the use of this variety is preferred to that of *A. muscaria*, due to its greater hallucinogenic properties. But the increase in psychotropic properties appears to be correlated with an increase in physical effects.² The case of involuntary poisoning in Rome (the poisoned patients thought they had eaten edible mushrooms) is not exceptional, since there are dozens of involuntary poisoning by *pantherina* in various parts of the world. The exceptional aspect of this case is simply that it was one of the cases recorded in Italy that described its features in great detail.

The reason why I should like to describe this case to readers is not merely the results of a case of bibliographical curiosity. I should like to clarify the subtle connection between the awareness of the act in a voluntary consumer of entheogens and his subsequent experience, and also to shed light on whether or not a plant or substance can be considered entheogenic as such or whether it should merely be considered entheogenic when taken for this reason. It may be useful to know what happens when the psychoactive agent is consumed without the subject being aware of what kind of experience will happen to him.

The poisoning case in Rome involved a whole family (7 people) and the effects began to show about an hour after the family's evening meal during which all members of the family had eaten the mushrooms they had previously collected earlier in the woods near their home. They were all taken to the ER [Emergency Room] of a local hospital; arriving in a state of confusion and several were observed to be laughing incessantly and one of the seven inebriated victims appeared to be -very worried. They all had Mydriasis and rigid pupils. Gastric lavage was applied to all of them, combined with analeptic and detoxication therapy. The following day, six of them were completely well. Only one member of the family, a women aged-35, who had eaten more mushrooms than the others, was still confused and hallucinating. This was why she was sent to the Psychiatric Clinic.

On the day after her arrival there, she was still in a state of severe psychomotor agitation, incapable of concentrating; she was continuously looking all around her, seizing and striking any stimulating object proffered to her, -and her anger was not just aimed at inanimate objects, but as well towards- the doctors who spoke to her and at the nurses who looked after her. Among the companions of her ward she sometimes identified a sister or her daughter and, in her acoustic hallucinations, she answered their alleged requests. Sometimes she shouted to herself without any apparent logical connections whereas, at other times, she merely mumbled unintelligible words. Her in-coordinated behavior showed all the elements

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of an unstructured dreamlike delirium which was almost instantly experienced by the patient in a kaleidoscopic succession of visual, acoustic and even olfactive hallucinations. The patient said that she was seeing 'Our Lady' who had told her that she had bestowed the grace of healing her from her stomach cancer [which she may or may not have had]. She claimed that she had heard a heavenly voice informing her that she had never suffered. She also confessed that she had smelt the scent of roses that immediately engulfed her into a vision, a vision she described as being of 'Saint Rose of Viterbo.' Saint Rose of Viterbo T.O.S.F. was a young woman who was often depicted wearing a crown of roses and holding a crucifix in her hands (1233-1251). She had been canonized in 1457 by Pope Callistus III.

In the short intervals between her psychic symptoms the patient realized that she was in a hospital, but did not know why and was disoriented in time. A neurological examination and a general clinical check-up failed to show any pathological symptoms, apart from moderate mydriasis and her pupils had displayed a slight rigidity to light. Her blood pressure was 130/80, with her pulse at a normal rate of rhythm and was quite regular. Her body temperature was also quite normal. She was immediately put on hypodermic detoxication, vitamins and glucose as treatment for her condition.

Two days later, the patient appeared calm, quiet and aware of her surroundings; of her clinical episode she only remembered having had a strong headache and having felt very nervous.

After four days of recovery she was allowed home; she had a good critical sense of her previous psychic condition, going hand in hand with some hypochondriac concern. She was now in a slight state of general asthenia and had pins and needles in her hands and feet that went on for about ten days.³

We do not know whether the lady who suffered this psychic experience was a Catholic or "just how Catholic" she was. On the other hand we know that the hallucination of seeing 'Our Lady' is a surface concept which is outside the experience of the person undergoing it, with the whole emotional impact which goes hand in hand with such an experience. It is more an "apparition."

Several other cases that are similar to this one are known. In a case in Germany, the ecstatic patient repeatedly said to whomever he met in the ward of the hospital where he had been recovering, "This is the most beautiful day of my life."⁴ And there is no doubt that, in spite of the unpleasant situation in which he found himself (a patient in a psyche ward of a local hospital), that day, at least in the mind of the patient, really was the most beautiful day of his life. From this point of view, the disturbing element was his environment rather than the exogenous agent consumed.

Most of these intoxications are accompanied by a high mood and a sense of euphoria, which have been pointed out by doctors who dealt with three cases. There was the case of some German soldiers who were poisoned by

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these mushrooms and treated their superiors with clumsy familiarity. In the Roman case, too, the two doctors reported that “the high mood was the most striking of the symptoms, so much so that the only one of all the poisoned people who worried about the severity of the symptoms was the one who had eaten the fewest of the mushrooms.”⁵

Within the last thousand years, countless men and – more often – women (apart from imposters) have gone through the experience of “seeing ‘Our Lady’”, or they report that they had heard heavenly voices calling out to them and some admit that they could smell the scent of roses. In this particular case we can clarify one of the motives – perhaps the least frequent one – for these events: the accidental eating of a kind of mushroom, i.e. the *Amanita*. In this case, the psychoactive agent manifests its entheogenic properties, although it has never been assumed to have them.

Any conclusion drawn in this context would be forced; let us leave the data as they are, but bare them in mind for future speculation.

All this brings to mind another case with a connection between a Christian ‘visionary’ experience with that of an inebriation caused by the accidental consumption of *Amanita muscaria*. Such an incident was, recently discussed by Daniele Piomelli⁶ and Giorgio Spertino⁷ regarding Saint Catherine of Genoa.

This Saint, who was born Caterina Fieschi-Adorno and lived from 1447 to 1510, was subject to frequent ecstatic raptures. Apparently her behavior does not seem to be

far removed from the general picture of her medieval Catholic mysticism. And yet, in her hagiographer’s detailed biography, we can read the following passage,⁸: “God, who had taken control over her body, wanted to regulate it and remove from it all human and earthly instincts. Since he wanted her to lose the sense of taste of the food she ate, he saw to it that she always carried aloe and agaric with her, so that, whenever she found that a food gave her pleasure or suspected that it did, she secretly put these bitter substances on it. Once God had prepared her soul in this way, he attracted her with spiritual temptations (Piomelli, 1991).”⁹

In the passage reported by Spertino which differs slightly, it is specified that the agaric is a kind of bitter mushroom. The temptation of seeing in this agaric the *Amanita muscaria* (or *Amanita pantherina*) is strong, and so is the temptation of making this mushroom responsible for the Saint’s mystical experiences.

We do not know – and perhaps never shall – whether Catherine was aware of the possible effects of the mushroom which she added to her food or whether – like the Roman lady who was poisoned in 1956 – she was unaware of it. There remains the fact that Catherine, too, saw Our Ladies. She saw so many of them that she was canonized (10).

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- 4). **Ibid.**, p. 683.
- 5). **Id.**
- 6). **D. Piomelli.** 1991. One route to religious ecstasy. *Nature*: vol. 349:362.
- 7). **G. Spertino.** 1993. Anorexia and Mysticism. *Altrove* col. 1: 65:76, p. 76.
- 8). **Rep. in M. Craveri.** 1980. *Sante e Streghe*. Milan, Feltrinelli, pp. 144-161, which I was unable to consult.
- 9). **Rep. in Piomelli:** op. cit., p. 362.
- 10). In spite of this great interest of this case to ethnomycoloists, I very much doubt that the mysticism of the Catholic Saints can be wholly explained away in terms of exogenous factors, such as psychotropic mushrooms.

Giorgio Samorini, Italia.

12 August 2019.

JOHN ALLEN's NOTES TO GIORGIO

- 1). No one knows what “Our Lady” looks like, except she is always portrayed in art, dressed with a cowl over her head similar to that of a nun. Yet thousands of people say they see the Virgin Mary all of the time. Since no one has ever seen her (the Virgin Mary) in this life for at least the last two thousand years, well then it stands to reason that no one knows what the hell she looked like if, indeed, she did exist in visions of the mind.

Seeing what one believes to be the vision or image of the Virgin Mary (Our Lady) is nothing more than the results of mass hallucinations from hypnotic mind control or mass hysteria that has continued year after year in some who were overloaded with Catholic Dogma and indoctrination into that religion.

That is my own personal belief about seeing someone who no one knows what he or she looks like.

- 2). I like Giorgio Samorini’s last comment reposted below.:)

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[quote]

In spite of this great interest of this case to ethnomycologists, I very much doubt that the mysticism of the Catholic Saints can be wholly [holy] explained away in terms of exogenous factors, such as psychotropic mushrooms.

[/quote]

The above brackets on the word 'Holy' in Giorgio Samorini's statement are mine, as are the brackets in the text.

.

Permission from author to use,

Giorgio Samorini, Italia.

12 August 2019.



Created from a photograph of a sculpture of the Virgin Mary at a cemetery

*Amanita pantherina gives one the feeling
of Flight.*

FiN.

Short Communication

Mazatec Mushroom Usage – Notes on Approach, Setting & Species for Curious Psilonauts

Sam Gandy¹

¹greensam2512@hotmail.com

Abstract

A variety of mushrooms of the *Psilocybe* genus have been employed shamanically by a variety of Mexican indigenous groups such as the Mazatec for the purposes of healing, divination and problem solving for many centuries. These mushrooms are held in great reverence by these groups, and they are used in a ritualised context involving preparation, with special attention given to parameters of the setting used for the mushroom session itself, with there being significant overlap between the different groups using these mushrooms. There are notable differences between the shamanic Mazatec approach to using mushrooms, and the more modern clinical therapeutic approach. A selection of the key species of *Psilocybe* mushroom used shamanically are examined in more detail. Given the ancient usage of mushrooms by these indigenous group, they have far deeper knowledge of their phenomenology and application in healing than Westerners, who are comparative newcomers to the mushroom. The traditional Mazatecan shamanic approach of working with the mushroom may soon become extinct, and the preservation and transmission of their knowledge ought to be prioritised.

KEYWORDS: Mazatec Ceremonial Procedures, Shamanic Healing, Veladas, Psilocybian Fungi, *Psilocybe caerulescens*, *Psilocybe mexicana*, *Psilocybe zapotecorum*, *Psilocybe cubensis*.

“There is a world beyond ours, a world that is far away, nearby and invisible. And there is where God lives, where the dead live, the spirits and the saints, a world where everything has already happened and everything is known. This world talks. It has a language of its own. I report what it says. The sacred mushroom takes me by the hand and brings me to the world where everything is known. It is they, the sacred mushrooms, that speak in a way I can understand. I ask them and they answer me. When I return from the trip that I have taken with them, I tell what they have told me and what they have shown me.” – María Sabina

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A manual used in describing methods of treatment protocol used in current therapeutic psilocybine sessions requires that those subjects undertaking treatments should be well-informed of what is about to happen to them while under the influence of psilocybine. Those under treatment must be aware that they must "trust, surrender, and let go." Expanding on this, Dr. William Richards (senior Johns Hopkins psychedelic researcher at Johns Hopkins) offers the following insight:

"The same force that takes you deep within will, of its impetus, return you safely to the everyday world."

One point mentioned in the manual notes that guides need to remind subjects while under their care, they will never be left alone during a session. Nor should they worry about their bodies while journeying under the influence of psilocybine during the session. If you feel like you're "dying, melting, dissolving, exploding, going crazy, etc.—go ahead, embrace it: Climb staircases, open doors, explore paths, fly over landscapes." And if you confront anything frightening, "look the monster in the eye and move towards it. . . . Dig in your heels; ask, 'What are you doing in my mind?' Or, 'What can I learn from you?' Look for the darkest corner in the basement, and shine your light there (Pollan, 2015)."

This approach has been successfully applied in therapeutic psilocybin sessions at Johns Hopkins, N.Y.U., and at the Imperial College in London, as well as at several other institutions that explore the therapeutic potential of psilocybine in psychiatric

medicine. Such use appears to buffer against the adverse reactions sometimes associated with the ludible use of psilocybin. The recommended setting is a comfortable room with subdued lighting, with the participant lying down wearing eyeshades on a bed or sofa. To create a playlist of carefully selected, predominantly instrumental music (avoiding human vocals) playing through headphones, ensuring comfort, and encouraging the experiencer to focus inwards. The lyrical narrative of human vocals is moot as they tend to be emotive and powerfully influence people's experiences in specific ways. This approach has its merits, and the results of some of the modern studies speak for themselves (Carhart-Harris et al., 2018; Griffiths et al., 2006; Griffiths et al., 2016; Griffiths et al., 2017; Ross et al., 2016). However, this is a stark divergence from the method employed by Mazatec curanderos, or shamans.

According to Gastón Guzmán (Allen, Pers. Comm, 2014), there are six indigenous groups in Mexico known to practice the ceremonial use of *Psilocybe* mushrooms, and there are six known species used. To the Mazatec and other tribes, the mushrooms are most sacred and are referred to by some shaman and others as *erupción de la tierra* (eruption of the earth), *razón bei* (mushroom of reason), *niños del agua* (children of the water), *nwintson abtom nashwin* (our masters, the mushrooms of the world), *Netocuhuatata* (the most holy of lords), *mbey san* (mushrooms of the saints), *cositas* (little things), *Los Santos Niños* (the little saints), *Pajaritos* (the little birds), and *nti si tho* (the little ones who spring forth)(in Spanish: *paquenos que brotan* [Little ones that spring forth]), and *Los Señors* (the Lords, used by

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the Mesoamericans)(Allen, 2020-In Press)." And the Mazatec referred to *Psilocybe hoogshagenii*, as *pajaritos de monte* (little birds of the woods).

In 1998, Guzmán wrote that "according to Wasson, in 1958, only nine Indian tribes in Mexico used the sacred mushrooms or did in the past." Those indigenous groups who used the sacred fungi in ritual ceremonies in the 1950s resided in the Nahuatl States of Mexico, Morelos, and

Puebla. Others include the Matlazincs in the state of Mexico; the Totonacs in the state of Veracruz; and the Mazatec, Mixtec, Mixe (Mije), Zapotec, and Chatino in the state of Oaxaca (Guzmán, 2008). Of these, the epicenter of usage in Mexico revolves around the Mazatec, who possess the most significant knowledge of mushroom lore. They employ mushrooms for problem-solving, physical, psychological, and spiritual healing, and seeking lost or stolen objects.

Ancient tradition calls for fasting before ingesting the mushrooms, except for fruit and water, if necessary. Although alcohol and other drugs are not recommended before, during, or after a sacred healing and curing ceremony, or velada, some shaman and others who perform such rituals do so. One should also bathe before the experience and wear clean white or brightly colored clothing. One should also not wear any black clothing during a ceremony.

Powdered San Pedro tobacco (*Nicotiana rustica*), is sometimes used alongside the mushrooms, applied topically to the wrists and forearms by the shaman as a tonic for the body (Fig. 1). Some Indians believe that tobacco has magical and remedial qualities and, on occasion, used as an offering on the altar. For several days before and after a mushroom ceremony, all participants must refrain from any sexual activity. Some who perform a ceremony also recommended that pork be avoided during this time.



Fig. 1. *Nicotiana rustica*. Preparing tobacco for curing. Photo: Courtesy of John W. Allen.

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Some Indians also believe that the San Pedro tobacco has magical and remedial qualities and, on occasion, used as an offering on the altar. For several days before and after a mushroom ceremony, all participants must refrain from any sexual activity. And it is also recommended that pork be avoided during this time. It is always good to refrain from any food at least 8 hours or more prior to a ceremony.

Communion with the mushroom is to be approached with humility and respect, but not fear. During the ceremony, those in attendance should always remain calm and be well prepared for any mental turbulence that can accompany entry into the bemushroomed realms. It is good to stay silent and speak as little as possible, at least in the beginning phase of the mushroom velada. Excessive talking can detract from the focus and energy of the experience, so one should save any conversations for later. Only the mushroom imbibers should be present, and overall, the fewer, the better, as too many people may taint the atmosphere.

Depending on the type of ceremony one is seeking, the shaman will pass out amongst the participants, several pairs of specific species of psilocybian fungi. Moreover, the shaman will never allow the mixing of species during a velada.

The mushrooms are then cleaned and blessed over copal smoke before ingestion and are always consumed fresh in pairs and always on an empty stomach. People are encouraged to take their time to chew the mushrooms thoroughly, which allows one's system and mind to adjust to the emergence of the rapid-

fire of the come-on to the visual effects of the experience which occur in short ripples and waves in a very calm manner. The Mazatec shaman and participants in an all-night vigil usually take from 20 to 30 minutes to consume a ceremonial dose. So they must be doing something right.

At the beginning of a ceremony, those who participate may consume some unsweetened cacao, an age-old custom practiced by the Aztecs as part of their mushroom ceremony preparation protocol. According to some, it is believed that the intake of chocolate dramatically intensifies the rapid flow of the geodesical and kaleidoscopic visionary aspect of the mushrooms colorfully brilliant and vividly (bright) visuals. However, in Western Civilization, there are many ludible users who prefer to drink a pint of chocolate milk during their consumption of either fresh or dried mushrooms. Fresh mushrooms also seem to produce a more intense display of those stunning visuals throughout the velada. Another aspect regarding the intake of raw cacao or drinking chocolate milk while consuming the fungi is that those ludible users believe that it helps to coat and protect their stomach lining from possible bacteria that might otherwise cause stomach cramps since the fungi have a woody and leathery-like consistency that is raw on the throat and stomach lining during digestion. After having consumed all the mushrooms, the shaman then extinguishes all the candles, as total darkness then descends upon the room. Mazatec shaman may chant and perform bodywork on participants or their selves during the velada with their hands.

Unlike the clinical therapeutic approach, the

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shaman ingests psilocybin alongside their patients.

At present, patients are only permitted 1-3 psilocybin sessions in a research study context, whereas in the traditional Mazatec context, people have the option of repeated and regular meetings. The Mazatec often consume mushrooms in family groups, which is rare outside the conventional framework of the velada.

The Mazatec velada setting is usually in the shaman's home, in a room with an altar. Those participating in ritual ceremonies need to stay focused during a velada. They should avoid bright lights and minimize any distractions; thus, a shaman will perform, often in darkness, or sometimes with candlelight. A velada may begin in pitch darkness, to ensure that visions are bright and clear (an approach that well-known psilonaut Terrence McKenna also recommended), with candles lit at a later time. The presence of candles is significant, and Mazatecs prefer homemade beeswax candles, which they say are the best. Candle flames serve as a neutral and absorbing focal point for a tried and tested means of anchoring awareness in the present. Candle flames have been employed in this context by many cultures and traditions, such as in yogic Trataka meditation, Buddhist Kasina meditation, and in Jewish ceremonies going back many centuries. The Mazatec shaman believes night time is the time most conducive to visionary insights and deep inner work. Despite regional, cultural, and linguistic differences between various indigenous groups, this setting and timing are a shared common element.

In the context of a Mazatec mushroom velada, the focal point of the setting is a traditional altar, comprising a table adorned with images of religious figures, local cultural deities, candles, flowers, and saints. The syncretic nature of the post-Colombian Mazatec tradition made it easy for them to assimilate Christian imagery into their rituals following the Spanish invasion and the spread of Catholicism that accompanied it.

Psilonauts are encouraged to focus on the candles and images, with sustained attention and avoiding "falling" into the trance, maintaining their intention on invoking the sacred. The typical Western approach, where people close their eyes and allow the music to guide them, has been described by Mazatec elder shaman Natalia Martinez as a "lazy approach," which does not allow the full potential of the mushroom to manifest.

Some Westerners may not be comfortable viewing pictures of religious figures or icons in people's homes or offices during a ceremony. Still, of course, an altar can be tailored to fit one's resonance. For example, those with a more pantheistic perspective maybe prefer natural objects, such as shells, crystals, pine cones, flowers, or feathers.

For those training with her, Natalia offers a full dinner plate of *derrumbe* (landslide) mushrooms (*Psilocybe caerulescens* Murr.) and encourages experiencers to maintain awareness throughout the experience (Fig. 2). Some researchers believe that this is deemed an invaluable exercise in training one's perception so that one can navigate their experience with a clear and centered mind, and allow one to work with what the mushroom presents to an undistracted mind.

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And that is considered an essential part of training for those who wish to provide mushroom veladas themselves. One must always sit erect on a small stool before the altar, maintaining awareness and open-eyed focus on the candles and images on the alter while remaining present. The platform acts as an anchor, providing a powerful means for orientating the experience and navigating challenging content when necessary. Natalia has been doing this work up to three times a week, for the past 40 years, and has fantastic energy for an 87-year-old woman.



Fig. 2. *Psilocybe caerulescens*. the Derrumbe (landslide) Fungi. Photo: Courtesy of Alan Rockefeller.

Consuming mushrooms in a Mazatec setting can result in compelling experiences and openings, and this approach may yield a very distinct set of lessons from that of the

Western therapeutic approach. Consumed regularly and consistently, weekly in some cases, the practice results in a set of progressive and deepening experiences, with

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each building upon the previous. Working with mushrooms in this way is considered by some to constitute a form of theurgy. In the US, taking mushrooms in this traditional manner means it may qualify as a sacred plant tradition, which of course, should be under the protection due to the Religion of Freedom Act as a legitimate entheogenic experience.

The Mazatec and other indigenous *Psilocybe* using groups tend to take the view that different species of mushrooms have different qualities or their own' signature (Pollan, 2015). Some are revered more than others or used for specific purposes. This view is shared by ethnobotanist Kathleen Harrison, who has worked extensively with the Mazatec using various species of *Psilocybe* fungi and that view is also commonly echoed by experienced growers and psilonauts. In the context of indigenous mushroom usage, the more potent species tend to be revered more highly.

In 2008, Guzmán wrote that 53 known

species of *Psilocybe* mushrooms had been reported from Mexico. Of those 53 species, only 22 were known to be active and used in ritual veladas (Allen, 1998; Guzmán, 2008). However, it appears that several of those species are synonyms of species already named by others. Current studies are underway that include synonymy based on the morphology of several species of *Psilocybe*. Guzmán et al (2012), had earlier, published some research on those *Psilocybe* species that were synonymous with *Psilocybe zapotecorum* Heim Emend. Guzmán, and Ramírez-Cruz et al. (2013), also published a similar types study of current Mexican species that are also synonymous with one another . Another [In Press] study is in *Nova Hedwigia* with more revision of types and synonymous names of the Mexican species, and Laura Guzman-Dávalos and colleagues are still preparing their study on the book of Section *Zapotecorum* (**Fig. 3**), in which her father, Gastón Guzmán decided to leave only 7 species in this group (Pers. Comm., Guzmán-Dávalos,, 2020).



Fig. 3. *Psilocybe zapotecorum*. Photo: Courtesy of Alan Rockefeller.

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Statistics provided to ethnomycologist John W. Allen by Guzmán in 2014, had informed Allen that only six species were currently being used by shamanic healers (female and male), amongst six tribal groups of indigenous peoples of Mesoamerica, who today, still perform actual veladas. (Allen, 2020. In Press). Of the species used, the most important and commonly used species are *P. caerulescens*, *P. zapotecorum*, *Psilocybe mexicana* Heim (Fig. 4a), *Psilocybe hoogshagenii* Heim (Fig. 4b), *Psilocybe yungensis* Singer et Smith, , and *Psilocybe cordispora* R. Heim (Allen, 1997; Guzman, 2008). The latter species is still under study is not noted as being a species commonly used in ritual ceremonies, besides, according to mycologist Alan Rockefeller, “*Psilocybe cordispora* is probably a synonym of some other species like *Psilocybe heimii* [Guzmán], or *Psilocybe banderillensis* [Guzmán], or *Psilocybe neoxalapensis* [Guzmán, Ram.-Guill. & Halling], it's not a name that I apply (Rockefeller, Pers. Comm., 2020).”. In the Aztec language Nahuatl the umbrella term *teotlaquilnanácatl* (divine mushroom that describes or paints), is applied across species. However, Guzman believed that was the name used for *P. caerulescens* by those in the Zapotec Tribes.



Fig. 4. A: *Psilocybe mexicana* and B: *Psilocybe hoogshagenii*. Photos: Courtesy of Alan Rockefeller.

Psilocybe cubensis (Earle} Sing. (Fig. 5), although common throughout Mexico, is not used by most shaman and curanderos in Mexico, where many consider it to be unclean due to its relationship with the dung of most four-legged ruminants. It remains doubtful that *P. cubensis* occurred in the New World before the arrival of the Spanish in the 1500s. However, some shaman and mestizos do provide ceremonies to backpackers and long-haired hippie types as well as educated Westerners seeking enlightenment by using *P. cubensis* for their mushroomic ceremonial rituals.



Fig. 5. *Psilocybe cubensis*. Fruiting in powder manure chunks to be sold as fertilizers at local markets. Photo: Courtesy of John W. Allen.

The Mazatec hold *P. caerulescens*, known as the *derrumbe* (landslide) mushroom, in particularly high regard. This species, at first, was believed to have likely been used by the Aztecs in their rituals, as documented by 16th-century Spanish chronicler Bernardino de Sahagún, who in his historical documents referred to them as teonanácatl (flesh of the gods). It was this species through which R. Gordon Wasson and Tim Leary had their seminal introductions to psilocybine. *Psilocybe caerulescens* is used ceremoniously not because of its potency, but because the species is said to produce its fuerza or force which the mushroom species is said to create a sharp, physically medicinal effect, sometimes experienced as deep waves of warmth and energy in the body. However, *P. caerulescens* (Fig. 6). is of an average dosage level by weight in comparison with that of *P. cubensis* (Fig. 7). The species most appreciated by the Mazatec shaman and curanderas are *P. mexicana*, and the shaman says that it is the species that provide the most peaceful and tranquil effects of the various mushrooms in their environment.

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Fig. 6. *Psilocybe caerulescens*. the Derrumbe (landslide) Fungi. Photo: Courtesy of Alan Rockefeller.



Fig. 7. *Psilocybe cubensis*. Hand held. Photo: Courtesy of John W. Allen.

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Psilocybe zapotecorum is another highly regarded and potent species, another *derrumbe* (landslide) fungi, known by the Zapotec Indians as *badao zóo* (drunken mushroom). It is held on par with *P. caerulescens* by the Mazatec but is a species kept in particularly high esteem by the Zapotecs (**Fig. 8**). Interestingly, this species was named to honor the Zapotec Indians who have used the species throughout their known history.



Fig. 8. *Psilocybe zapotecorum*. Photo: Courtesy of Alan Rockefeller

Psilocybe mexicana, known as *pajaritos* (little birds), is another highly revered species used by several Mexican indigenous groups, it is the mushroom from which renown chemist Albert Hofmann first extracted and identified psilocybine and psilocine.

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Psilocybe mexicana is also the most cherished species adored and sought after by María Sabina, the Mazatec curandera who was responsible for introducing psilocybine mushrooms to the Western world (Fig. 9). The Mazatec says of this species *que suave* (how smooth). The Zapotec are known for sharing this species with their children as they view it to be the friendliest and most forgiving of species. It goes by many different names among the various indigenous Mexican groups that use it, and the Zapotecs, as do the Mazatecs, often referred to this species as *nize* (little bird).



Fig. 9. *Psilocybe mexicana*. Photos: Courtesy of Alan Rockefeller.

Another species of note is *P. hoogshagenii*, which is employed shamanistically by the Mixes (Mijes) and Zapotec Indians, and it, too, shares a wide variety of different names.

The Spanish refer to *P. hoogshagenii* as *los niños* (little boys), and *los Chamaquitos*, while Mazatec Shaman refer to the species as *pajaritos de monte* (little birds of the woods). The Mazatec and the Mixe (Mijes) also refer to *P. hoogshagenii* as *atka:t* (the judge), and both deem that species to be a very wise mushroom. It seems to be another unique species that is a quite sought-out by shaman faced with important philosophical decisions.

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It is interesting to note that a related variation of this species, *Psilocybe hoogshagenii* Heim var. *convexa* Guzmán is a synonym for *Psilocybe semperfervida* Heim et Caillieux. It is also a highly sought out species by a few psilonauts that have grown it. It is slow to fruit but not as easy to cultivate as the more widely known *P. cubensis*. *P. hoogshagenii* var. *convexa* was initially assigned the species name 'semperfervida,' which translates as 'undying,' due to its highly resilient and tenacious nature and its ability to produce several flushes of the highly potent mushrooms, but only a few flushes occur..



Fig.(10). *Psilocybe yungensis*. Photo: Courtesy of Alan Rockefeller.

Psilocybe cubensis, the San Isidro mushroom (Allen, 2016), was made famous by the McKenna brothers (Terence and Dennis), Paul Stamets, and Dr. Steven H. Pollock, who published books and cultivation manuals used for propagating this species. All four of those psilonauts have published incredible inventive new methods for cultivating many species of the sacred fungi, thus providing many new and improved methods for the easy cultivation of not only *P. cubensis*, but also several other exotic species of the holy fungi. Because of their pioneering cultivating methods, they have made *P. cubensis* readily available to those throughout the world in regions where the mushrooms did not grow .

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In 1988, Terence McKenna questioned the origins of the coprophilic nature of *P. cubensis*, wondering whether it was "exclusively a creature of the manure of *Bos indicus* (cattle), or could it occur in the manure of other cattle?" Although *P. cubensis* occurs in association with the manure of *Bos indicus*, especially after heavy rainfalls, Schultes (1989, pers. comm.) indicated that this mushroom species, as well as certain other species of psilocybin fungi, could occur in the manure of other wild ruminants, including species of deer. Guzmán (1983) and Watling (1989, Pers. Comm.) also reported that some species of psilocybin fungi grow in association with Kangaroo feces.



Fig. 11. *Psilocybe cubensis*. Wavy Capped South African Transkei Strain. Photo: Courtesy of John W. Allen. .

The distribution of *P. cubensis* is widespread in subtropical zones of the world, yet it is unknown in the tropics. In Mexico, it is prevalent, having spread alongside cattle farming as it fruits quite abundantly on bovine dung. *Psilocybe cubensis* is a common coprophilic dung-inhibitor that occurs in the

manure and manured soil of many four-legged ruminants. That includes Brahman cattle (*Bos indicus*, *Bos sundaicus*), and Gaur (*Bos gaurus*), the latter is a rather common species of a very large bovid (water buffalo) that originated in the Indian subcontinent, Southeast Asia, and China. Today, it is also

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found in Europe, Australia, North America, South America, and some African countries. And the common water buffalo (*Bubalus bubalis*). There is a saying amongst mushroom lovers that "one may find the mushrooms wherever the buffalo roam."

Other four-legged ruminants where one can find *P. cubensis* include the Asian elephant (*Elephas maximus*) and the African elephant, which comprise two distinct species: the African bush elephant (*Loxodonta africana*) and the smaller African elephant (*Loxodonta cyclotis*).

Besides cattle and elephants, *P. cubensis* also can be found growing in the manure of sheep (*Ovis aries*), Indian Rhino (*Rhinoceros unicornis*), African black rhino (*Diceros bicornis*), Black wildebeest (*Connochaetes gnou*) and the Blue wildebeest (*Connochaetes gnou*), and even deer (*Cervidae*). That includes the muntjac, the elk (*wapiti*), the fallow deer, and the chital, and the Capreolinae, including the reindeer (caribou), the roe deer, and the moose. As for the ordinary horse, *P. cubensis* is rarely found fruiting in the manure of horse (*Equus caballus*), although horse manure is often used, along with straw/hay compost, and stable shavings in the home cultivation at home. Furthermore, this species at times may also occur in fertile soil in pastures and meadows, along roadsides in manure heaps and sometimes in powdered manured fertilizers. *Psilocybe cogenesis* is also known to occur in forest areas next to pasturelands where cattle wander into wooded areas leaving manure heaps along cattle trails leading into the surrounding forest areas.

Other entheogenic species occur in deciduous woods among decayed leaves and

twigs, in grassy areas such as lawns, meadows, and pastures, and rotted hay. However, remember that *P. cubensis* can be home cultivated and fruits abundantly, yielding huge flushes, and as a result, it is grown worldwide.

In Mexico, *P. cubensis* is purportedly used widely by several different indigenous groups and is a dependable ally, fruiting abundantly and possessing a long growing season. It is known as di-shi-tjo-le-ra-ja ("divine mushroom of manure") by the Mazatec. It is certainly not one of the more revered species; however, among Mexican *Psilocybe*-using groups, it is widely considered to occupy the lowest rung of the ladder of shamanic mushroom preference. Perhaps this is due to its non-native status (having being brought into Mexico by the Spanish introduction of cattle into the New World). Other factors under consideration as to why it is not a popular species used by the Mazatec is because it grows on dung, has a lower potency, or it possesses different experiential qualities compared to other species.

San Isidro is the patron saint of the fields, farming, and labor (this mushroom species thrives in farmlands). And some Mazatec will consume this mushroom before building a house or tilling a new field, or before embarking on some vital work to give them clarity and luck. However, not all shamans will work with *P. cubensis*, including María Sabina, who never worked with it in her *veladas* (Schultes, Hofmann & Rätsch, 2001). However, mestizo charlatan shamans have used *P. cubensis* in ceremonies as a means of generating income from tourists. In 1988, Terrence

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McKenna had an experience with *P. cubensis* that was so harrowing that he swore off heroic mushroom doses altogether (McKenna, 2012). Psilonauts with extensive knowledge of the different species almost universally hold the view that those revered by shamans surpass *P. cubensis* in experiential qualities. Interestingly, *P. cubensis*, with its universal accessibility, has been profoundly influential, extending its mycelial tendrils into the brains of so many members of our species. Still, there is more to the *Psilocybe* mushroom world than what one might imagine is known.

The Mazatec have over 500+ years, and through word of mouth, passed down from one generation to another, knowledge of the mushrooms amongst the sabios and sabias of the land. They have over 2000 years of experience working with mushrooms and a far more in-depth understanding of knowledge of their phenomenology and application in healing, more-so than the Westerners, who are comparative newcomers to the mushrooms.

There is a world of experience to be gained from the knowledge that the Mazatec shamans possess, and the loss of their culture would be a tragedy. Due to the advent of modern medicine, however, the increasing domination of Western civilization in the Mazatecan lands, and the subsequent erosion of their cultural traditions, very few of the younger Mazatec generation are interested in pursuing healing work using mushrooms. It appears that the traditional Mazatec shamanic approach to working with the mushrooms may soon become extinct. If so, we ought to prioritize the preservation and transmission of their knowledge by utilizing these medicinal and powerful mushrooms as an adjacent to psychotherapy, and for possible use in the treatment and potential cure for many other illnesses that plague humankind. Current research is right on target in regards to remedies for various types of cancer and compulsive headaches disorders (See MAPS website and John Hopkins for info on current cancer research, and Ally, 2006, etc.

An After Thought

As we now know, *Psilocybe cubensis* has gained widespread popularity amongst thousands of shroom lovers worldwide. The reason this is so is because this species is clandestinely cultivated worldwide in basement cellars and attics. And it just also happens to be the one species most sought after by tourists who trek through the High Sierra Mazateca into Oaxaca, Mexico, eventually arriving at the mushroom capital of Mesoamerica in the village of Huautla de Jimenez. Those intrepid long-haired backpackers, students, and assorted psilonaut pilgrims, still flock to the region in the hopes of experiencing the magic of the sacred fungi. And once they reach Palenque, it is the local mestizos who sell this species to the long-haired foreigners for a few pesos.

Moreover, in recent years, children in Guatemala still sell *P. mexicana*, as well as *P. cubensis* to visiting backpackers and tourists, and even further to the SW region of Oaxaca in the village of

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San Jose del Pacifico, there is a local Zapotec Indian, Margarito Mendoza, who was but 5-years-of-age when he was first fed magic mushrooms by his grandmother. He works in a local hostel (the Sueño Atrapado) in the village and helps the visiting backpackers who are seeking the sacred fungi. The operator of that hostel is an immigrant from Ballarat, Australia, who spent the last seven years in San Jose del Pacifico.



Fig. 12. Palenque: The Temple of the Sun. Courtesy of John W. Allen.

And it is this Australian with naval-length dreadlocks who offers mushroom ceremonies to tourists who come to the village. On occasions, he and a few other backpackers who stay for short visits also peddle mushrooms to other tourists, and sometimes they face the wrath of local shamanic healers who do not appreciate the illicit businesses offered by foreigners migrating into

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their region. One local shaman reported that he told a foreigner that he could find himself minus his lower extremities if he continued to offer mushrooms and mushroom ceremonies to other tourists. It seems that the Australian interloper had interfered in the shaman's lively hood once too often.

Current statistics show that over 200 backpackers a month arrive in the village of san Jos del Pacifico, all seeking to voyage on those mushrooms. In addition to the mushrooms, licensed shaman (male and female) offer in their local shops, gnarly nasty sealed jars of mushrooms stored in honey, and those jars of honeyed mushrooms, over a short time, had fermented into a mead of sort, loaded with bugs. Both the Zapotec shaman (male and female) charge 40-50 Euro-dollars for a jar for the honeyed mushrooms. Furthermore, the phony foreign shaman of San Jose del Pacifico, who offers mushroom veladas, charge as much as \$45 U.S. for a fungal high and even much more for an all-night velada. As in Huautla de Jiménez, the backpackers also are now purportedly causing problems for the local indigenous Zapotec people of the village just as the foreign long-haired hippies did in Huautla de Jimenez in the 1960s and 1970s (Bavarstock, 2015).



Fig. 13. *Psilocybe cubensis*. Ban Phang Ka Strain. Courtesy of John W. Allen

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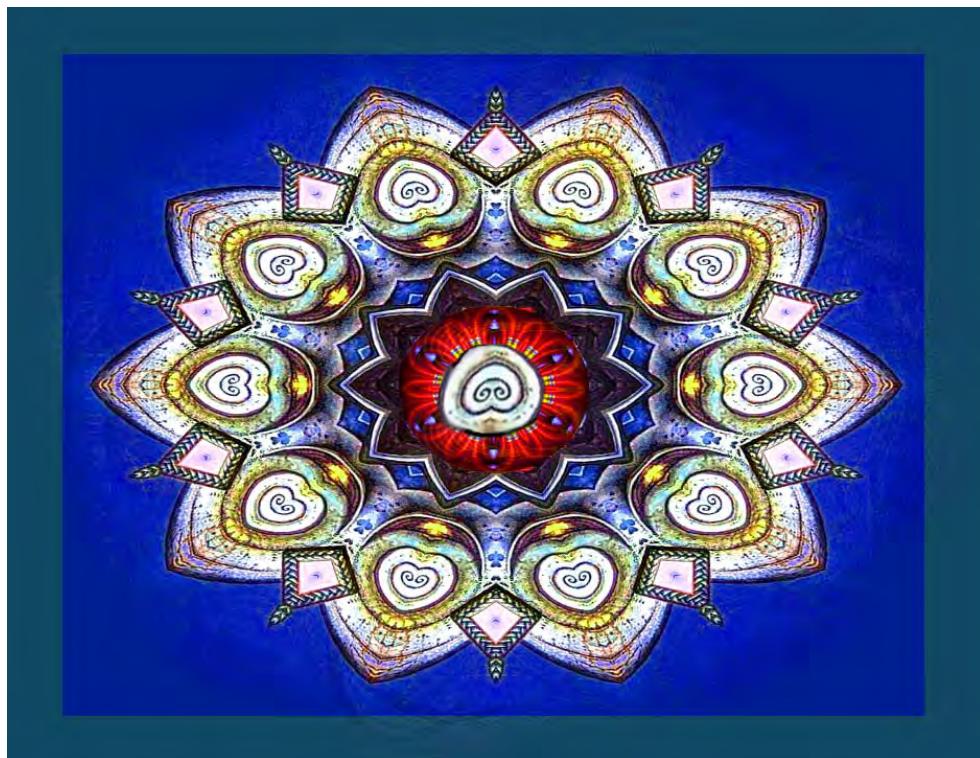


Fig. 14. Aztec Dreams 107. Aztec-Like Graphic Mushroomic Simulation Design by John W. Allen



Fig. 15. *Psilocybe cubensis*. In Dreamscape's Botanical Plug In. Photo and Art Courtesy of John W. Allen.

FIN.

AUTHORS GALLERY

P.D. Newman



P.D. Newman is an internationally recognized author and lecturer specializing in the use of entheogenic compounds in magico-religious settings. A member of both the Masonic Fraternity and the Society of Rosicrucian's, his book, *Alchemically Stoned: The Psychedelic Secret of Freemasonry* explores the use of the powerful hallucinogenic compound, DMT, by a number of eighteenth century Masonic Alchemists.
http://www.thelaudablepursuit.com/articles/2017/6/21/introducing-alchemically-stoned-the-psychadelic-secret-of-freemasonry?fbclid=IwAR1VciQX8Bt7s3fqmYZpTIuwdL1eJ_BSG7UWmjTTc-HGSU2qlc0YIFtnZBw/

ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES VOLUME X

Sam Gandy



Dr Sam Gandy is an ecologist, writer and speaker. He works as a collaborator with the Psychedelic Research Group at Imperial College London. He is interested in the intersection of two of his big passions – nature and psychedelics...and how psychedelics have the potential to reconnect our increasingly disconnected species to the natural world, for the betterment of humanity and the biosphere at large.

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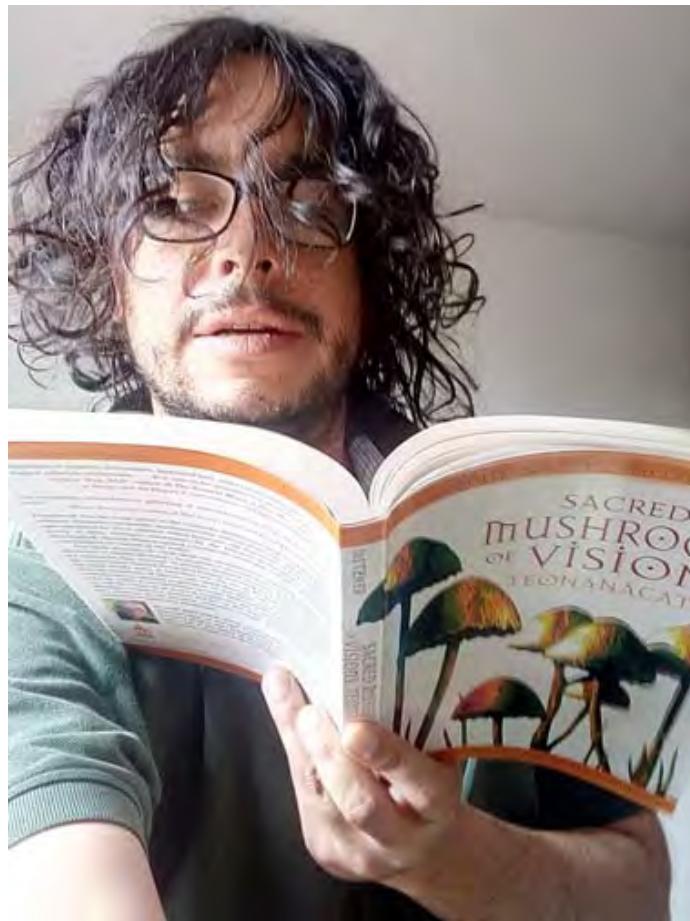
Giorgio Samorini



Giorgio Samorini is born in Italy in 1957. He is an ethnobotanist and ethnomycologist specialized on psychoactive plants and mushrooms. He developed field researches among native groups of Africa, Asia and Americas, studying their use of the visionary plants. He has carried out extensive studies on the Bwiti cult of tropical Africa, where the visionary plant iboga is used as entheogenic source, and he discovered the oldest archaeological documentation testifying the human use of hallucinogenic mushroom in the Sahara desert. He authored many scientific papers and books published in different languages.
<https://samorini.it/?fbclid=IwAR2OSg7So8OkIWqmXxkrwRH14PGoJ7w80ZI28VvhBU8IP-oKiYZLvmRBdio>

ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES VOLUME X

Juan Camilo Rodriguez Martinez



Juan Camilo Rodriguez Martinez is an amateur ethnomycologist who resides in the city of Bogotá, in the beautiful country of Colombia. He is the author of two novels and numerous privately printed studies centering on the prehispanic traditions and cultures of the ancient Muisca's of Colombia, South America. In his spare time, Juan likes to walk in the woods near his home and create amateur reports of mushrooms. Recently Juan became the first forager of wild fungi in Colombia to report the occurrence of *Stropharia rugosoannulata* in Colombia. His interests in the use of entheogenic mushrooms, *Amanita* and *Psilocybe* species, revolve around the possible cultic use by prehispanic indigenous societies of Colombia and their possible role in today's modern cultures. Because of Juan's love of the mushrooms, he founded an independent project, "The Sociedad Colombiana de Micología." A small organization dedicated and devoted to the study of fungi in the vicinity in and around the cities surrounding Bogota, and Ville de Leyva, Colombia. <https://scdemicologia.blogspot.com/2020/01/soma-and-tayronas-mushroom-fleur-de-lis.html>

ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES VOLUME X

Prakitsin Sihanonth, Ph.D.



Prakitsin Sihanonth is professor at Department of Microbiology, Faculty of Science, Chulalongkorn University, Bangkok, Thailand. Dr. Sihanonth has received B.Sc. from Chulalongkorn University, MS. and Ph.D. from University of Georgia, U.S.A., and has taught courses in soil microbiology, environmental sciences and mycology. Dr. Sihanonth has also authored and coauthored a number of publications that focus on the discovery of new fungal species and secondary metabolites, as well as bioactive compounds produced by fungi. Besides being an associate editor of this journal, Dr. Sihanonth has also coauthored, along with John W. Allen, six papers on the study of entheogenic fungi:

- 1) Allen, J. W., Gartz, Jochen., Sihanonth, Prakitsin and Dan Molter. 2009. The Occurrence, Cultivation, and Chemistry of *Psilocybe ovoideocystidiata*, a new Bluing Species (Agaricales) from Ohio, Pennsylvania and West Virginia. *Ethnomycological Journals: Sacred Mushroom Studies* Vol. VIII:67-74.
- 2) Allen, John W., Gartz, Jochen., Sihanonth, Prakitsin., and Fulvio Castillo Suarez. 2009. The Occurrence and Detection of Psilocine, Psilocybine and Baecystine in *Psilocybe villarrealiae* from Xalapa, Veracruz, Mexico. (1994). *Ethnomycological Journals: Sacred Mushroom Studies* Vol. VIII:75-86.
- 3) John W. Allen, Prakitsin Sihanonth, Jochen Gartz, Jitra Paipukiew and Gianluca Toro. 2012 An Ethnopharmacological and Ethnomycological Update on the Occurrence, Use, Cultivation, Chemical Analysis of Neurotropic Fungi from Thailand, Cambodia and other Regions of South and Southeast Asia. (2012). *Ethnomycological Journals: Sacred Mushroom Studies* Vol. IX:1-140.
- 4) Guzmán, Gastón., Allen, John W. and Prakitsin Sihanonth. 2006. Distribution of the Hallucinogenic Mushroom *Psilocybe antioquensis* Guzmán et al. (Agaricomycetidae) in Colombia, Mexico and Cambodia. *International Journal for Medicinal Mushrooms* vol. 8(1):85-89.
- 5) Guzmán, Gastón, Allen, John W., Ramirez-Guillén, Florencia., and Prakitsin Sihanonth. 2007. A New Record of *Psilocybe pegleriana* in Asia (Basidiomycotina, Agaricales, Strophariaceae) and its Culture in the Laboratory. *Australasian Mycologist* vol. 25(3):73-76.
- 6) Pornpakakul, Surachai., Suwancharoen, Sunisa., Petsom, Amorn., Roengsumran, Sophon., Muangsin, Nongnuj., Narongsak, Chaichit., Piapukiew, Jitra., Sihanonth, Prakitsin and John W. Allen. 2009. A new sesquiterpenoid metabolite from *Psilocybe samuiensis*. *Journal of Asian Natural Products Research* Vol. 11(1):12-17. January.

ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES VOLUME X

John W. Allen



John W. Allen is an amateur ethnomycologist who has studied, photographed and lectured on entheogenic fungi for more than 40 years. He is the author of 13 books, one medical poster, four CD-ROMs, as well as more than 3 dozen academic papers and ephemeral magazine articles on the nontraditional ludible use and field identification of psilocybin fungi,. Over the past 40 years, Allen has shared more than 100 lectures and slide presentations with the public, and even discovered a new species, *Psilocybe samuiensis* Guzmán, Bandala and Allen. Recently, in 2014, a new species was named in his honor, *Psilocybe allenii*, Borovička, Rockefeller and P. G. Werner. Vol. IX of Ethnomycological Journals: Sacred Mushroom Studies has been posted online at the MAPS website: <http://www.maps.org/books/NeuroMasterApril20-2013.pdf>/ Currently Allen provides two great web-sites pertaining to psilocybin mushrooms, Mushroom John's Shroom World: "Tales of the Shrooms" <http://www.mushroomjohn.org/> and two mushroom groups at <http://www.facebook.com/> as John W. Allen. In the early 2000s, Papua, New Guinea issued a *Psilocybe cubensis* commemorative mushroom stamp of one of John's photographs. John Resides in the Pacific Northwestern United States.



Image: Ban Thurian, Koh Samui, Thailand. Graphic image by John W. Allen.

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Image: *Psilocybe cubensis*. Papua, New Guinea Postal Service Stamp. 2005. Photo: Courtesy of John W. Allen.



Image: John W. Allen's Postage Stamp. *Psilocybe subcubensis* (Syn.=*Psilocybe cubensis*). From above photograph.

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FIN.

ETHNOMYCOLOGICAL JOURNALS: SACRED MUSHROOM STUDIES VOLUME X

Allen's Compendium of the Neotropic Fungi Part II: Psilocybian Fungi and Related Species

Compiled by John W. Allen

The history of the use of entheogenic mushrooms lay hidden in the past like artifacts of the great cultures that used them lay hidden in the thick jungles of the land. The jungles have surrendered some of the secrets of the past and even today they yield a harvest of the divine mushrooms that give visions to the seer and the sage, the infirm and the seeker of altered states of consciousness.

The divine mushrooms have been in use by native healers, shaman and/or sorcerers for over 3,000 years and though they remained hidden from world view, many infrequent references to their existence remained obscure to the botanists and historians who read of them in the academic literature and yet made no effort to record their botanical significance or their proper ethnomyco logical place in history.

This compendium has been compiled to aid and enable both the scholar and intrepid student of mycology as well as the occasional ludible user of these naturally occurring psychomimetic entheogenic fungi. John W. Allen has brought together items appearing in both scientific and scholarly journal publications and books along with news items appearing in newspapers and popular ephemeral magazines dealing with the trends of the times. He has brought together the professional with the laity. It is this form of integration that can best present the effect the rediscovery that the sacred mushrooms has had to those interested in their study.

The reemergence of the entheogenic mushrooms has made the study of altered states of consciousness and philosophy more meaningful to many. It has brought out the scientist in the layman. The sacred mushrooms have made their way into the gardens and homes of many admirers. The ground is just being broken in the quest for a greater meaning of that which is sacred, that which is profound, that which is natural, that which is stimulating, and that which is entertaining.

This compendium brings together material which can lead to a fuller understanding of the mushrooms and ourselves and our own interactions with others. It should prove to be an invaluable aid to those who come seeking knowledge and with that knowledge truth. May those who follow the path begun by these works and those works to follow find the answers they seek, and if it is not there, might they add to these lines the secrets they discovered.

Coming in the summer 2020 issue of *Entnomycological Journals: Sacred Mushroom Studies* Vol. XI. Including a revised edition of *Ancient Shamanic Mushroom Names of Mesoamerica and Other regions of the World*. Lavishly illustrated. Contents include 2400 references, 2450 annotations, and 10,000 Cross-References. More than 600 pages.

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Image: Shroom Visual with Glassine Trilobite. Graphic Design in KPTS 5 by John W. Allen.

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"John W. Allen has assembled some very important works on fungi, including some previously unpublished fact-finding data documents such as the 1908 historical timeline on Ergot from which LSD was originally synthesized, and his Compendium Part I on *Amanita muscaria*. The Latter work provides researchers, students and scholars alike, with a vast cornucopia of references on the academic and published literature of the history, use, chemistry, and pharmacological actions of *Amanita* species, as well as references of Soma and use of *Amanita* species in Siberia, North America, and ancient India, including a never before published paper on an accidental inebriation of *Amanita pantherina* that occurred in Italy in 1956. From Colombia, a new hypothesis that suggests that the ancient Prehispanic Man-Bat shaman of the Muiscas of Colombia may have used psilocybin fungi in a cultic manner at the time of the conquest of Nueva Espana. Additionally, two other papers, one presents a suggestion that the sclerotia (or 'Philosophers Stone') from certain species of dung inhabiting fungi may have been known of by ancient and modern day alchemists who may have used such sclerotia in potions related to witchcraft and magic for hundreds of centuries. Also, presenting a paper on Mazatec culture and some suggestions on the proper protocol and procedures for using psilocybin fungi as an adjacent to psychotherapeutic treatments in humans in contemporary society in manners similar to those employed by the Mazatec and other Tribal groups of indigenous peoples of Mesoamerica as tools used in Healing and curing ceremonies. Over 265 pages, this issue is lavishly illustrated with beautiful photographs of several psilocybin species by Alan Rockefeller (California), Harry Regin (Germany), Jeremy Bigwood (Washington, D. C.), Arthur Brack and Tjakko Stijve (Switzerland), and Michael Engstrom (Sweden). As usual I highly recommend it to anybody with an interest in entheogenic fungi and other psychoactives. Mr. Allen has done the work and has produced an essential guide for those interested in furthering their studies of the Entheogenic fungi."

--David Tatelman,
President, Homestead Book, Co. (Now retired).

"Encyclopediacally, overflowing with rare and valuable information; a treasure chest of exquisitely beautiful imagery and little known information; this material is an absolute gold mind of scientific artistic, and historical treasures. Much loved and most highly recommended."

--David Jay Brown, author of "The New Science of Psychedelics."

"John W. Allen has created another in his series of fungal monographs. This updates his previous material and adds additional material on ergot poisoning."

--Keeper Trout.