Hallucinogenic Mushrooms in Mississippi

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MISSISSIPPI and adjacent states are rapidly receiving a reputation in the drug culture as the "mushroom capital" of the United States. Since the 1950s, when a number of scientific articles[1] and articles in the popular press[2, 3] discussed the ritualistic use of hallucinogenic mushrooms in Mexico, the "magic mushrooms of Mexico" have been identified in the United States. Within the past four years several books have appeared in the underground press which extoll the virtues of these mushrooms, provide explicit field guides for obtaining them, and even provide recipes for their consumption.[4-6]

The traditional hallucinogenic mushroom has been *Psilocybe mexicana.* It was this mushroom which gained fame in the 1950s and is still the most frequently cited hallucinogenic mushroom. *Psilocybe mexicana* is the prototype of the *Psilocybe* genus, which contains over a dozen species, most of which have been found to contain psilocin and psilocybin as the active ingredients. The most prevalent *Psilocybe* mushroom in this part of the country is *Psilocybe cubensis,* also identified as *Stropharia cubensis.* In terms of psychotropic effects and active ingredients, *Psilocybe cubensis* does not appear to differ from *Psilocybe mexicana.*

It is surprising that *Psilocybe cubensis,* and a slightly more distant cousin *Panaeolus subbalteaus,* have not received extensive attention in the regional or national scientific literature. *Psilocybe cubensis* is distributed abundantly in Louisiana, Mississippi and Alabama, and has been reported to be naturally occurring in Florida and California.[6] This species is prevalent 24 hours after a spring or fall shower and is almost exclusively found growing on cattle manure in well drained pasture land. Amateur mycologists presume to have found *Psilocybe cubensis* based on the presence of all of the following criteria: its physical location, gills beneath the cap, hollow stem, and stem turns inky blue within an hour of being broken and exposed to the air.[6]

This paper reviews the availability of several hallucinogenic mushrooms in the state, with particular emphasis on Psilocybe cubensis. *The mushroom is discussed in terms of its natural habitat, seasonal availability, and active ingredients. The abuse of this mushroom is discussed in terms of method of preparation, course of effects, and abusers' preferences for this drug. The accidental and intentional use of toxic* Amanita *mushrooms is also noted.*

Panaeolus subbalteaus, the second native hallucinogenic mushroom, is frequently found growing amid clumps of *Psilocybe,* has the same hallucinogenic effects, and apparently has the same ingredients. It is, however, much less common than *Psilocybe cubensis* and is physically distinctive. This difference in physical appearance frequently causes it to be overlooked or discarded by the *Psilocybe* hunter. The knowledge that there is another mushroom besides *Psilocybe,* together with incomplete information about it, may contribute to accidental poisoning from the toxic varieties.

A great amount of ingenuity has gone into the development of recipes for eating these mushrooms. The more traditional approach is to prepare them as edible mushrooms, such as frying them in butter. Variations include eating them raw in the field, drying them so they can be eaten later, drying and grinding them in a blender so they can be placed in gelatin capsules, or freezing them in the ice box for later cooking. Neither drying or freezing appears to reduce the potency of the drugs.[7] An even newer approach is to boil the mushrooms in water to re-

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move the active ingredients (which are soluble in hot water), use the water to prepare foods such as rice or soups, and discard the remains of the mushrooms. This is the basic recipe for hallucinogenic beverage such as "magic cool aid." Reports from users indicate that the boiling method is preferred by those who have tried it, since it is relatively free from detection by law enforcement agents and eliminates the somewhat undesirable taste which may accompany raw or fried mushrooms.

Potency differences have been reported between fresh *Psilocybe* mushrooms in relationship to seasonal and growth effects.[6] Specimens are apparently less potent during the dry hot months and following periods of excessive rain. Naturally, the amount of psilocybin and psilocin consumed depends greatly upon the size of the mushroom, but from 2 to 6 average sized mushrooms appears to be the minimum effective dose.

OBSERVATIONS

During the past 2 years a number of regular mushroom users have been observed at various intervals of time following ingestion of *Psilocybe cubensis.* The extent of actual mushroom use in this area is apt to be underestimated by the observation of only a dozen users but it may be noted that these observaions have been the result of accidental discovery of these users while pursuing other research interests or social endeavors. As a matter of scientific curiosity, the observations were carried out as unobtrusively as possible and with a minimum of intervention. The observed effects of *Psilocybe cubensis,* and the effects reported by these users, will not be discussed in detail other than to note that they agree closely with the effects usually attributed to hallucinogenic drugs or the magic mushrooms of Mexico.[1] One advantage to *Psilocybe* mushrooms appears to be that unlike most hallucinogenic drugs purchased on the street, the adulterating impurities such as strychnine, quinine, and stimulants are absent. The only adverse effects reported from the mushrooms have been some loss of balance, some dizziness, and minimal nausea, all of which have been reported by these users to sometimes accompany or precede the onset of hallucinogenic effects. The onset of hallucinogenic effects has been reported from 5 minutes when consumed in liquid form to 30 minutes when eaten with other foods, but these times may be underestimates and may be influenced by the user's expectation of an effect. Peak hallucinogenic effects seem to occur and decline gradually with a median duration of effect of approximately 4 hours. Both duration and intensity of effect have been reported by the users to be dose related. No after-effects have been observed or reported by these users.

Aside from the psychologically disruptive effect of *Psilocybe,* which appears to be primarily perceptual, and the possibility of legal complications, one of the major problems is that a number of mushroom "mistakes" occur each year. These mistakes generally involve the ingestion of a toxic species which has either been mistakenly harvested or has been consumed intentionally. The most common mistake is to identify the toxic *Amanita muscarina* as a *Psilocybe.* Aside from obvious physical differences between these mushrooms, *Amanita* appears to require a longer growth period to reach full size and maximal concentration of its toxic ingredients. The advantage here is that if a *Psilocybe* hunter accidentally picks an *Amanita* the first day after a spring shower, it may not be full sized and may not contain a large amount of the toxic ingredient. Unfortunately, the *Amanita* species are likely to occur throughout the summer and to have high concentrations of muscarine when *Psilocybe* mushrooms are scarce. The ingestion of certain species of *Amanita,* even in moderate quantities, may well prove fatal if not treated.

Despite this fact, a new trend to actively seek *Amanita* species has been observed, apparently on the belief by some users that *Amanita muscarina* is the "sacred mushroom." The individuals who have intentionally consumed *Amanita* mushrooms have indicated unanimously that they found no hallucinogenic effects. These subjects also reported unanimously that they experienced excessive perspiration, and most subjects also reported blurred vision (apparently a failure in accommodation). Even though Schultes[8] reported that *Amanita* has been used for centuries in Siberia as an inebriant, such a practice locally can be very dangerous. The incidence of mushroom poisoning in the U. S. has not been very high but most of these cases have been due to *Amanita* species, particularly *A. phalloides, A. vera,* and *A. verna.*[9] The omission of *A. muscarina* from this list is probably due to its rapid production of gastrointestinal disturbance. Wide variability in the physical appearance of the *Amanita* species increases the likelihood of confusing the more toxic Amanitas with *Amanita muscarina.* The pharmacology and treatment of *Amanita* poisoning is well reported in the medical literature.

There is every reason to believe that the intentional use of *Psilocybe* and *Panaeolus* mushrooms will increase, and along with this increase will be an increase in the intentional and accidental consumption of *Amanita* species. All of these mushrooms are well publicized in the underground press and have a number of desirable qualities for both the regular and occasional drug users. Judging from the comments made by users of *Psilocybe* mushrooms, this is the "ideal" hallucinogenic agent, it is readily available, and is the cheapest hallucinogen available. Considering these factors, medical practitioners in a number of settings should be alerted to the problems which will probably become more frequently reported in the future, especially to the dangers of accidental poisoning from Amanita in users of other mushrooms. ★★★

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