

Psychedelic Agents and Mysticism

ALBERT MORACZEWSKI, O.P., Ph.D.

INTRODUCTION

■ Mushrooms often complement a fine steak dinner but John M. Allegro in his recently published book, *The Sacred Mushroom and the Cross*,¹ has served up mushrooms in a rare combination. It is his contention that Judaism and Christianity developed out of pre-existing fertility cults in which worship of the mushroom *Amanita muscaria* was practiced. Whether or not his claim that there was no historical Jesus of Nazareth (for He was just a mushroom), is validly supported by the evidence, is not the issue of this paper. Rather what is here being considered is the use of psychedelic agents such as *Amanita muscaria*, *Peyote*, LSD, for the purpose of producing an alteration of the state of consciousness which some have termed "mystical", or "religious experience." Granted that many "droppers of acid" and "blowers of weed" do so for non-religious reasons, there are some who do seek a transcendental experience from the drug. It should be recalled that the modern psychedelic drug user in search of God has a long line of predecessors. And it has been suggested that man's very notion of a deity may have arisen from his experience with hallucinatory substances.²

According to Schulte, the Harvard botanist, there are some sixty known plant species which are used by primitive and advanced peoples as sources of intoxicants.³ Among the identified chemical substances, the principal psychoactive compounds are listed in Table I along with the botanical family in which they are found. To this list could be added some synthetic hallucinogens such as lysergic acid diethylamide (LSD) and 2, 5-dimethoxy-4-methylamphetamine (DOM, STP). There is obviously no shortage of available chemical substances that will give a person the experi-

ence of his life. In spite of the wide range of organic compounds produced by the plant kingdom it is of interest to note that a majority of the known psychedelic compounds are in some way structurally related to the neurotransmitter, serotonin. Recently, Smythies and his co-workers have proposed a possible mechanism of action of these drugs involving a serotonin receptor in the brain.⁴ At the present time we have no generally accepted proposed biochemical mechanism of action for these various hallucinogens nor are we able to relate convincingly the known biochemical effects to any specific behavioral phenomena.

DRUGS AND MYSTICISM

Several writers of recent times have extolled the use of psychedelic agents for the production of mystical states. Among these I can mention the late Aldous Huxley who in beautiful prose described the drug-induced experience as "aeons of blissful experience",⁵ "contemplation at its height"⁶ and "four hundred milligrams of Revelation".⁷ The guru of the psychedelic experience, Dr. Timothy Leary is no less enthusiastic:

"I have repeated this biochemical (and (to me) sacramental ritual over fifty times personally, and almost every time, I have been awed by religious revelations as shattering as the first experience. . . .

Our studies, naturalistic and experimental, thus demonstrate that if the expectation, preparation and setting are spiritual, an intense mystical or revelatory experience can be expected in from 40 to 90 per cent of subjects ingesting psychedelic drugs."

Apart from these enthusiasts whose testimony might in the minds of the skeptic be suspect, there are more sober minded individuals who do see some religious possibilities in these agents. Dr. Walter N. Pahnke, a psychiatrist who has done extensive research in the therapeutic use of LSD and similar drugs, concludes after a carefully controlled experiment with seminarians that "... under the con-

Dr. Moraczewski, is from the Institute of Religion and Human Development, Texas Medical Center, Houston, Texas.

ditions of this experiment, those subjects who received psilocybin experienced phenomena that were apparently indistinguishable from, if not identical with, certain categories defined by the typology of mystical consciousness."⁹ The typology to which Pahnke refers is comprised of nine characteristics such as a sense of unity, transcendence of time and space, deeply positive mood, etc., which following the work of W. T. Stace, he found to be common in the writings of mystics in a wide range of cultures.¹⁰

Masters and Houston in their *Varieties of Psychedelic Experience* state that

"One of the most important questions raised by the psychedelic drugs is whether authentic religious and mystical experiences occur among the drug subjects. To this question the answer must be Yes—but we feel an extended discussion is warranted and that many qualifications are in order."¹¹

In *Chemical Ecstasy—Psychedelic Drugs and Religion*, W. H. Clark observes that

"On the basis of the evidence the conclusion would seem inescapable that an important property of the psychedelic chemicals is their agency as a releaser of profound religious experience of an ecstatic and mystical nature in many persons

who otherwise would never dream that they had the capacity."¹²

These few quotations will suffice to show that the question is not an idle one nor is it a position held only by extremists and "hippies".

On the other hand there are those¹³⁻¹⁸ who feel uncomfortable with the conclusion that drugs can induce a true mystical state. There are different ways, however, of pointing up the precise problem. One way is to say with William Braden, that "From one point of view, LSD presents the orthodox church with a challenge more awesome than the Turk and the comet—from which, good Lord, deliver us. It casts doubt on the validity of religious experience as a whole, suggesting that the mystical awareness of God is nothing more than Chemistry—and therefore a delusion".¹⁹

Another way of stating the conflict emphasizes what has been called the "Protestant ethic".

"To some these (mystical) experiences came easily but others had to undergo prolonged and severe mortifications of the spirit and flesh before the desirable visions were achieved. So difficult has it been to achieve these states that man has considered it almost immoral should they come with little effort. In fact, one of the greatest criticisms of the psychedelic experience is that it comes rather too easily as if only what is attainable with extreme difficulty is valuable."²⁰

A lingering uneasiness remains. "Are these changes truly or really religious?", ask Downing and Wygant. They go on to answer,

"We can only say that the elaborations presented about these subjects in answer to our questions are possibly, not certainly, to be of a religious nature. It is impossible to make dogmatic statements as to what experience described by the subjects under LSD really is because of its subjectivity. One can say that some, not all, of our subjects believed in the religious nature of the experience. Are there any other criteria to use?"²¹

The Indian spiritual leader, Meher Baba, insists that the psychedelic experience bears the same relationship to the authentic mystical experience as does a mirage to water. He writes:

"No drug, whatever its great promise, can help one to attain the spiritual goal. There is no short cut to the goal except through the grace of the perfect master, and drugs, LSD more than others,

TABLE I*

Psychedelic Compounds and Representative Plant Sources

Active Compound	Botanical Family
1. Mescaline	(<i>Lophophora</i>)
2. psilocybin	(<i>Psilocybe</i> , <i>Stropharia</i>)
3. tetrahydrocannabinol	(<i>Cannabis</i>)
4. muscimole	(<i>Amanita</i>)
5. scopolamine	(<i>Datura</i>)
6. harmine	(<i>Banisteriopsis</i>)
7. ibogaine	(<i>Tabernanthe</i>)
8. ergine	(<i>Rivea</i> , <i>Ipomoea</i>)
9. dimethyltryptamine	(<i>Mimosa</i> , <i>Banisteriopsis</i>)
10. 5-methoxy-N, N-dimethyltryptamine	(<i>Virola</i>)

*Adapted from Schulte³

give only a semblance of 'spiritual experience', a glimpse of a false reality.

"The experience is as far removed from reality as is a mirage from water. No matter how much one pursues the mirage one will never reach water and the search for God through drugs must end in disillusionment. . . . If God can be found through the medium of any drug, God is not worthy of being God."²²

These words reflect the objection that any in the Judaeo-Christian tradition would voice. They would say how can God be found by merely ingesting a chemical substance? It would seem to create an "instant mysticism," "God-on-demand". Instead of rubbing a bottle to get an Arabian genie one would only pop a pill to call God down from Heaven. Understandably, such a magical approach to religion troubles many people. In response to such a stance, Houston and Masters write:

"... anyone arguing in this way must also, we think, rule out most of the 'religious experiences' of many famous mystics and saints, since these persons, too, induced in themselves physiological changes instrumental in bringing about confrontation with God and mystical union. Drugs are quicker and perhaps more effective than fasting and other ascetic practices, but the principle would seem to be the same."²³

The last quotation helps to focus our attention on two issues:

1. Does the expression "mystical phenomena" (or similar) mean the same thing when used by different authors writing on this subject?
2. Were these ascetical practices truly causal in bringing about the described experiences, or merely dispositive and even perhaps totally unconnected?

MEANING OF MYSTICISM

Whereas what we mean by the term "psychedelic agents" can be fairly well defined—even though there may be some fuzziness at the edges—the other term of the relationship, "mysticism" is itself the very word often taken to describe something which is elusive, unknowable, vague and generally unsatisfactory as a means of discourse. When William James wrote in his classic, *The Varieties of Religious Experience*, that "One may say truly, I think, that personal religious ex-

perience has its root and center in mystical forms of consciousness",²⁴ he expressed a deep conviction but at the same time cast but little light on the subject. Nowhere did he succeed in defining clearly this "mystical consciousness."

In line with James' statement is that of Walter Houston Clark:

"Religion, I will be thinking of as an inner experience of the individual when he senses ultimate reality, whether as God, a Beyond, transcendent cosmic process, wholly different and profound dimension of life, Nirvana, or however one chooses to name and interpret this ultimate reality, and particularly when this experience is confirmed by the attempts of the individual to harmonize his life with the Reality he senses."²⁵

To me this definition—if it be such—is so broad an umbrella that almost any deeply human experience is covered by it. Attempts to universalize the concept of mysticism so as to include all cultures are doomed to fail or to create a useless definition. There are almost as many definitions and concepts of mysticism as there are authors on the subject. *For the objective of this paper* I will propose a definition compatible with a Judaeo-Christian tradition. It can be simply stated as *the intuitive awareness of God's personal presence and action*. The points of emphasis are:

1. This awareness is not the immediate and direct result of a line of reasoning, but of a leap of the spirit.
2. It is God's immediate presence (and action) which is deeply perceived.
3. God is apprehended not merely as a cosmic force or ultimate Reality but as Person.

MYSTICISM AND ASCETICAL PRACTICES

What evidence is there that any physical manipulation be it with drugs, sleep sensory or food deprivation, will bring about of itself a mystical experience? The answer, it seems to me in a word, is "none." Yet the problem should not be dismissed so simply; it merits closer examination.

That sleep deprivation, sensory deprivation and prolonged fasting do indeed bring about various types of behavioral changes including hallucinations there seems little

doubt.²⁶ Attempts have been made to monitor the biochemical and neurological changes occurring in these situations. Although some studies have been conducted on humans as yet we know too little about the correlation between biochemical processes as determined by plasma and urine levels of relevant reactants and products, and the behavioral manifestations to be able to draw firm conclusions.²⁷ Again, we know that psychedelic agents also will produce such behavioral and psychological changes but the precise mechanisms by which such phenomena are brought about remain obscure. In any events, it is *not* on the hallucinatory experiences that I want to focus because these are not really central to the mystical phenomenon as I understand that term.

Pahnke and Stace likewise in their respective publications make it clear that hallucinations, visions and the like are to be *excluded* from what belongs essentially to the mystical experience. In the nine-point typology to which reference has already been made,¹⁰ no mention is made of hallucinations or other perceptual changes. In fact, the very characteristics Pahnke and Stace emphasize are *not* found in the reports of the sleep or food deprived individual. Yet, hallucinations, pseudo-hallucinations and a variety of perceptual distortions have been reported in individuals exposed to such stresses. So it seems to me, that if the mystics, or at least some of them, fasted, led relatively isolated i.e., socially deprived lives, and lived in an environment of reduced sensory input, whatever hallucinatory experiences they may have had, these were apart from their more profound experiences as mystics. Yet, we must push the problem further.

If we take it as part of the current behavioral dogma that every mental activity is reflected somehow in parallel neural and biochemical changes, then we must say that even in these more profound meditative states there are neurobiological correlates. But just what these may be is another question. There are reports,²⁸ for example, about profound physiological modifications recorded during the meditations of Buddhist monks; these may well be a clue to what happens *concurrently*. But any

causal connection in light of present evidence remains very dubious.

To return to the claim that psychedelic agents bring about a phenomenon similar to or identical with mystical experience, the focus of attention seems necessarily to be on the *total* phenomenon and not on one isolated segment of it. Certainly these drugs will first of all bring about changes on a biochemical level. Accumulating evidence has implicated serotonin as a key substance in the mechanism of action of many of these substances.²⁹ But to grant that serotonin is indeed involved in the action of the psychedelic drugs and in the consequences of sleep deprivation³⁰ does not constitute evidence that the "mystical" component of drug action is related at all to serotonin, although the latter may be related to the hallucinatory phenomenon.

REDUCTIONISM

Critical to this discussion of drug-induced experiences is the underlying assumption of an absolute reductionism, which holds that human phenomena such as memory, learning, emotions and higher mental activity can be reduced to, and completely explained by—in theory if not fact—the biochemical activity of the brain. If it is true that every memory, every bit of conscious awareness can be simply and ultimately expressed in terms of some molecular process, then by simply introducing into the brain the specific chemical substances which will trigger the processes responsible for a particular experience, the person can totally re-experience the original situation without duplicating the complex external and internal circumstances that engendered that experience in the first place. Or, if it were possible, as Aldous Huxley projected in his 1957 lecture to the New York Academy of Sciences,³¹ to achieve the mystical experience of a St. John of the Cross by taking the right drug, then anyone regardless of his background, would be able to undergo such a mystical experience by merely ingesting the particular chemical substance which encodes the desired mystical experience.

But does this claim have any evidence in its support? Admittedly, there is a consider-

able amount of work currently going on in many laboratories throughout the world directed to determining the biochemical correlates of memory and learning. Such research received a real impetus when James McConnell presented evidence showing that "memory" in planaria could be transferred from one group to another (of the same species) by cannibalism.³² It was concluded that the memory was in some manner represented molecularly. But *what* was transferred? A closer look at these experiments and the data submitted by other workers led some to be skeptical about the interpretation. It could, for example, have been a facilitating phenomenon. However, other experiments with rats, goldfish and mice have provided data which supports the position that something is being transferred from one animal to another. For example, when brain extracts taken from rats that have been conditioned to select a lighted tunnel rather than their natural choice of a dark one, are injected directly into the brain of naive rats, these latter will acquire the conditioning much faster than the controls.³³ Ungar's group have already tentatively identified the operative molecule as a fairly simple polypeptide combined with an RNA molecule.³⁴ Recent work on the chemistry of memory and learning suggests that the "memory molecule" is either a protein or RNA, or both. But even granted all this, is there warrant to say that all human experiences, especially those of a religious nature, can be induced or released by the ingestion of a specific chemical substance, by-passing the complex multilevel interaction which constitutes a human experience? To me, it seems not.

THE DRUG INDUCED EXPERIENCE

Having briefly considered the underlying assumption of the molecular correlates of human behavior, we next need to look at the drug-induced experience itself. By this date, the general physiological and psychological effects of the psychedelic agents are quite well known and consequently there is no need to rehearse them here. For my purpose it is sufficient to cite an example of the "psychedelic" or "mystical" component to give a flavor of

these drug-induced experiences. A single example, more or less typical, of the non-drug induced mystical phenomenon as defined in this paper is also presented.

For the "mystical" aspect of the drug-induced event we can use R. Gordon Wasson's description which he gives of his experience after chewing teonanactl, the psilocybin-containing mushroom.

"For the first time the word 'ecstasy' took on a meaning. 'Ecstasy' was not someone else's state of mind. It was no longer a trite superlative cheapened by overuse. It signified something different and superior in kind, about which RGW could now testify as a competent witness. There came one moment when it seemed as though the visions themselves were about to be transcended . . . and we were to find ourselves in the presence of the Ultimate. We seemed to be flying at the dark gates as a swallow at a dazzling lighthouse, and the gates were to part and admit us. But they did not open, and with a thud we fell back, gasping. We felt disappointed, but also frightened and half relieved, that we had not entered into the presence of the Ineffable, whence, it seemed to us at the time, we might not have returned, for we had sensed that a willing extinction in the divine radiance had been awaiting us."³⁵

There is no doubt that this was a deeply moving experience, and although visions are reported, the writer implies, also, a movement towards an absorption into the ultimate. This "annihilation" of the individual is to be contrasted with the following type of experience.

Of the many examples that could be cited from the mystical literature allow me to call on the famous St. Teresa of Avila, who was recently named a doctor of the Church, the first woman to be so honored. (In these days of the "Women's Lib") it seems appropriate to call her up to testify in such an important matter). She writes:

"It is brought in this Mansion (the seventh) by means of an intellectual vision, in which, by representation of the truth in a particular way, the Most Holy Trinity reveals itself, in all three Persons. It sees these three Persons, individually, and yet, by a wonderful kind of knowledge which is given to it, the soul realizes that most certainly and truly all these three Persons are one Substance and one Power and one Knowledge and one God alone; so that what we hold by faith the soul may be said to grasp by sight, although nothing is seen by the eyes, either of the body or

of the
all three
soul and
words w
namely:
Spirit w
Him and
Oh, C
between
being le
are."

Wh
the per
ment is
it is or
duced
seems
person
tion or
Els.

"In
with th
of simp
tain typ
du tradit
is the ce
tion."

Mys
suggesti
fection
this uni
tional.

Fu
"W.
on whi
attemp
that th
but th
theolog
perien
asserti
that n
sonalis
ble the
ences
but ar

Ph
between
induce
between
signifi
can su
result
our co
functio

of the soul for it is no imaginary vision. Here all three Persons communicate Themselves to the soul and speak to the soul and explain to it those words which the Gospel attributes to the Lord—namely, that He and the Father and the Holy Spirit will come to dwell with the soul which loves Him and keeps His commandments.

Oh, God help me! What a difference there is between hearing and believing these words, and being led in this way to realize how true they are."³⁶

What stands out in this last quotation is the personal element. For St. Teresa that element is all important even though sometimes it is only implicitly present. In the drug-induced phenomenon it is this element which seems to be generally absent; rather than a personal relationship, there is an identification or absorption.

Elsewhere I have written:

"In such mysticism the experience of union with the Absolute in non-relational, i.e., it is one of simple identification. In Jewish, Christian, certain types of Islamic, and the *bahki* forms of Hindu tradition, the union is precisely relational, it is the communion of persons in an I-Thou relation."³⁷

Mystics use many metaphors and terms suggesting identification, to indicate the perfection of the union, but they also insist that this union is essentially personal and relational.

Furthermore:

"W. T. Stace in his *Mysticism and Philosophy* on which both Houston and Pahnke rely heavily, attempts to obliterate this distinction by arguing that the experience is the same for all mystics, but that I-Thou mystics are compelled by their theological commitments to reinterpret their experiences in an 'orthodox' relational way. This assertion is gratuitous and amounts to saying that non-dualistic mysticism is genuine and personalistic mysticism is faked. But is it not possible that there are a variety of analogous experiences which have some resemblance to each other, but are also profoundly different?

Phenomenologically one can find a distinction between 'spontaneous' mysticism and the drug-induced variety. There seems to be no proportion between the taking of a psychedelic drug and the *significance* of the experience produced. That one can suffer a profoundly moving experience as a result of drug action is not unexpected in light of our current knowledge of the chemistry of brain function. But that the *meaning* of such an experi-

ence is specifically a religious, mystical one seems to be an effect totally disproportionate to a pharmacological cause. In human affairs there is a gradual growth process in the development of deep and lasting interpersonal relationships. There may be love at first sight—perhaps as a result of hormonal disposition and psychological set—but this first experience requires prolonged human intelligence to develop fully into deep, lasting love. If this is true between humans, it would be even more valid of the relationship between man and his transcendent God."³⁸

SUMMARY AND CONCLUSION

Whether or not Christianity is an outgrowth of mushroom cults remains to be critically analyzed. The objective of this present paper is to examine the repeated claim that psychedelic agents can and do in fact bring about an experience which is indistinguishable from what is generally called a religious or mystical experience. While mysticism has many different meanings, here it is defined as an intuitive awareness of God's personal presence or action. Although fasting, sleep and sensory deprivation do bring about alterations in the state of consciousness, including hallucinations, they do not seem of *themselves* to induce a mystical state. Underlying the claim of a drug-induced mysticism seems to be an absolute reductionism which states that all human activity is *fully* explainable by molecular events. However, this is a philosophical position which has not been validated. Furthermore, the experiences induced by psychedelic agents are generally characterized by identification with the cosmos rather than a relationship to person. Finally, there seems to be no proportion between the act of "dropping acid" and a deeply intense and meaningful experience of intuiting God's presence.

That the psychedelic agents do on occasion bring about a profound change in a person's attitude or life styles is admitted. But the available evidence certainly does not support the claim that these drugs can affect an authentic, mystical experience. Hallucinations, yes; mysticism, no!

Acknowledgements: This paper is based on research which was supported by a St. Thomas Aquinas Foundation Grant made to the author.

PSYCHOSOMATICS

He wishes also to thank Miss Jane Schwerdtfeger for her valuable bibliographical assistance.

REFERENCES

1. Allegro, John M.: *The Sacred Mushroom and the Cross*, Garden City, New York, Doubleday and Co., Inc. 1970.
2. Wasson, R. Gordon: "Soma of the Aryans: an ancient hallucinogen-", *Bulletin on Narcotics*, 22(3):25, 1970.
3. cf. Schulte, R. E.: "The Plant Kingdom and Hallucinogens", *Bulletin on Narcotics*, 21(3): 5, 1969.
4. Smythies, John R.: "The Mechanism of Action of Hallucinogenic Drugs on a Possible Serotonin Receptor in the Brain," *International Review of Neurobiology*, 12(2):207, 1970.
5. Huxley, Aldous: "The History of Tension," in *Annals of the New York Academy of Sciences*, Vol. 67, Art. 10, p. 683, 1957.
6. Huxley, Aldous, *The Doors of Perception*, New York: Harper, 1954, p. 41.
7. Huxley, Aldous: *Island*, New York: Harper, 1962, p. 185.
8. Leary, Timothy: "The Religious Experience: Its Production and Interpretation. *Journal of Psychedelic Drugs*, 1 (2): p. 3, Winter 1967-68.
9. Pahnke, Walter N. and Richards, William A.: "Implications of LSD and Experimental Mysticism." *Journal of Religion and Health*. 5: (3), 192, 1966.
10. Pahnke, Walter, N.: "The Contribution of the Psychology of Religion to the Therapeutic Use of the Psychedelic Substances," in *The Use of LSD in Psychotherapy*, edited by A.A. Abramson.
11. Masters, R. E. L., and Jean Houston: *The Varieties of Psychedelic Experience*, New York: Holt, Rinehart and Winston, 1966, p. 247.
12. Clark, Walter Houston: *Chemical Ecstasy: Psychedelic Drugs and Religion*, New York: Sheed and Ward, 1970, p. 90.
13. Laski, Marghanita: *Ecstasy*, Bloomington, Ind., Indiana University Press, 1961.
14. Zaehner, Robert, C.: *Mysticism, Sacred and Profane*, New York: Oxford, 1957.
15. Baba, Meher: "LSD and the Highroads", quoted in *Journal of Psychedelic Drugs* 1(2): 38-44, 1967-68.
16. Moraczewski, Albert: "Mescaline, Madness and Mysticism", *Thought* 42: 358-582, 1967.
17. Moraczewski, Albert: "LSD and Chemical Mysticism", *Listening* 2,(3): 204-212 (1967).
18. Moraczewski, Albert: Book Review of *Chemical Ecstasy: Psychedelic Drugs and Religion* by Walter Houston Clark, *Cross and Crown*, XXIII, (1): 112-115, 1970.
19. Braden, William: *The Private Sea*, Chicago, Quadrangle Books, Inc. 1967, p. 16-17.
20. Hoffer, Abraham and Osmond, Humphrey: *The Hallucinogens*, New York: Academic Press, p. 133, 1967.
21. Downing, Joseph, J., and Wygant, William, Jr.: "Psychedelic Experience and Religious Belief" in *Utopias — Use and User of LSD-25*, edited by R. H. Blum, New York: Atherton Press, 1964, p. 182.
22. Baba, Meher: *Op. Cit.*, pp. 39 and 43.
23. Masters, R.E.L. and Houston, Jean: *op. cit.* p. 299.
24. James, William: *The Varieties of Religious Experience*, New York: Mentor Books, 1968, p. 292.
25. Clark, Walter Houston, *op. cit.*, p. 6.
26. Cf. Leff, J. P.: "Perceptual Phenomena and Personality in Sensory Deprivation", *British Journal of Psychiatry*, 11: 1499-1508, 1968.
27. Cf. Kollar, Edward J., Pasnua, Robert O. Rubia, Robert T., Naitoh, Paul, Slater, Grant G., and Koles, Anthony: "Psychological, Psychophysiological and Biochemical Correlates of Prolonged Sleep Deprivation" in *American Journal of Psychiatry*, 126: 488-97, 1969.
28. Allison, John: "Respiratory Changes during transcendental Meditation", *Lancet* 1:833-4, 1970, 18 April.
29. Smythies, *et al*, *op. cit.*
30. Kuhn, E., Rysanek, K., and Brodan, V.: "Alteration of tryptophan metabolism induced by sleep deprivation", *Experientia* 24:901, 1968.
31. Huxley, Aldous: "The History of Tension," *op. cit.* 683-684.
32. McConnell, J.: "Memory transfer through Cannibalism in Planarians" *Journal of Neuropsychiatry*, 3 (Suppl. 1), 1962.
33. Ungar, Georges: "Transfer of learned behavior by Brain extracts", *Journal of Biological Psychology*, 9 (1): 12-27, 1967.
34. Ungar, G.: "Chemical Transfer of Learned Information", in *Protein Metabolism of the Nervous System*, Chapter 29, 571-585. Edited by A. Lajtha, New York: Plenum Press, 1970.
35. Wasson, V.P., and Wasson, R. Gordon: *Mushrooms, Russia and History*, New York: Pantheon, 1957, Vol. 2, p. 295.
36. St. Teresa of Jesus, *Complete Works*, edited by E. Allison Peers, New York: Sheed and Ward, 1946, Vol. II, pp. 331-332.
37. Moraczewski, Albert: *op. cit.*, p. 114.
38. *Ibid.*