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Cover depicts the root and leaf of the African Ibogaine plant, a major focus of this issue. Cover Illustration: silhouette photo by Marti Kranzberg Computer-enhanced photo and Ibogaine illustration by John Carlson

# Addiction: Nature vs. Nurture — Again?

Focus

by James W. Prescott

#### Biology and culture are the two sides of the coin of addiction and they cannot be separated from one another.

The disease of dualism is once again upon us. In fact, it has never really left us. When it comes to questions about any aspect of human behavior the age-old question arises: Is the explanation of this kind of behavior to be found in our genes (nature) or in the environment (nurture)? This question is further re-stated as follows: Is the explanation of this kind of behavior to be found in our biology or in the social-psychological matrix of our culture? Thus, in this strategy of thinking, genes are equated with biology; and environment is equated with culture. Further, this form of dualism is invariably posed as an either/or proposition and, rarely, as an interaction or combination of the two sides of this coin of dualism. Like any coin (behavior), its identity or existence cannot be described with only one side of the coin. This situation is analogous to trying to comprehend and find meaning in the ZEN statement: "The sound of one hand clapping"!

A further error in this disease of biological and cultural dualism is the assumption that our biology is formed only by our genes and not by our culture. Nothing could be further from the truth. The structural and functional development of the brain are both influenced substantially by the nature of our social-physical environment, i.e. our culture. Structure is defined by the physical characteristics of brain cells, e.g., cell body, axons, dendrites, spines; synapses—receptor mechanisms; and function is defined by the neurochemical and neuroelectrical characteristics of brain cell activity.

Last year in the Sept/Oct edition of *The Truth Seeker*, which was devoted to the drug problem, three essays were published that outlined how the social-physical environment, i.e. culture modifies the course of brain development at both the structural and functional levels; and how these modifications of brain structure and function underlie behaviors of alienation, depression, violence and the addictive disorders. Specifically, it was shown how the rearing of infants and the young in sociallyisolated environments (translate into failure of affectional bonding between mother and infant; and between parents and offspring) results in a wide-variety of structural and functional abnormalities of the brain. Some of these abnormalities include reduced number and malformation of dendrites, spines and opiate receptors (structural bases of brain cell communication); and a variety of abnormalities in neurochemical transmitters and electrical characteristics of the brain (functional bases of brain cell communication).

In particular, it was emphasized how the neurobiological circuits of the brain that mediate pleasure are damaged by social-isolation rearing (sensory deprivation of touch and body movement) that defines the failure of affectional bonding. In such brain-damaged and braindysfunctional organisms, drugs are sought to bring relief from the emotional pain of this early affectional deprivation (loss of love); and to provide a different and more immediate form of brain stimulation to experience pleasure that cannot be readily experienced through the normative routes of the sensory systems that produce pleasure (body touch and movement) because they have been damaged by early sensory deprivation. This is why child abuse and neglect (e.g., sensory affectional deprivation) is found so invariably in the history of violent and addictive personality disorders.

It is for these reasons that the protagonists of biological and cultural dualism when explaining and understanding drug addiction are so much in error. Biology and culture are the two sides of the coin of addiction and they cannot be separated from one another. Elsewhere, I have referred to these two kinds of biology as "Geno-biology" and "Eco-biology" (Prescott, 1979). Unfortunately, the failure to recognize these two forms of biology and other errors inherent in biological and cultural dualism have profound consequences for understanding the origins, treatment and prevention of the addictive disorders and they carry substantial emotional, social and economic costs to both the individual and society.

culture modifies the course of brain development

For example, it is well established that the Hypothalamic-Pituitary-Adrenocortical Axis (HPA) is significantly involved in high levels of ethanol (alcohol) consumption in animals exposed to high stress. Furthermore, it has been shown that experimental injection of ACTH (adrenocortico-trophic hormone, a neuropeptide chain of amino acids labeled 1-39) results in similar effects as previously found in stressed animals. (Nash and Maickel, 1988). More significantly, it was also found that the injection of a specific segment of this amino acid chain (ACTH, 4-10) completely blocked the consumption of ethanol in the stressed animals (Krishnan and Maickel, 1990). Based upon the peaceful and contented behavior of the ACTH, 4-10 treated animals, these investigators referred to ACTH, 4-10 as the "feeling good" chemical that is naturally produced by the brain and is similar to the endorphins, another "feeling good" chemical of the brain that naturally counters the effects of stress. Such reasoning is supported by the findings of Blum, et al (1987) who found that alcohol-preferring mice had significantly lower base line methionine-enkephalin (brain opiate) levels in the hypothalamus as compared to non-alcohol preferring mice.

Thus, alcohol consumption is pursued to excess not to get drunk but rather to obtain ACTH release, specifically, its "feeling good" segment— ACTH, 4-10 — and/or the enkephalins because of a brain deficit(s) that prevents the experiencing of natural pleasure due to chronic stress.

The findings by other investigators that plasma cortisol, a measure of HPA activity, is significantly lower in hospitalized substance abusers than in normal controls, supports the role of ACTH and an abnormal functioning HPA system of the brain in these addicts (King, et. al., 1990).

It is not possible to cite the other studies in this essay, that support the line of reasoning that developmental brain deficits associated with an impaired ability to experience natural pleasure underlies the addictive disorders; and that such brain-behavioral deficits are facilitated by the anti-pleasure ethic of certain religious belief systems.

Clearly, brain function and its disorders cannot be ignored in the chemically addicted person. Addicts who cannot break the overwhelming "craving" undoubtedly are characterized by some form(s) of brain dysfunction that requires more directed and focused treatments that are not present in the cognitive therapies which must come later in a well-designed treatment program. Certainly, addicts who are in the grips of uncontrolled "craving" because of a brain disorder do not belong in prison nor in the custody of law enforcement agencies who have no training or expertise in the treatment or management of brain-behavioral disorders. Other solutions are needed in dealing with the individual addict.

In this edition of *The Truth Seeker* the reader will find the viewpoints of several very distinguished authorities on drug use, abuse, and addictions who prefer to view either the biological or cultural face of addiction, to the neglect of the other. In particular, a selected contribution from Dr. Stanton Peele, one of the most distinguished and respected authorities on drug abuse and addiction, has addressed the nature of addiction.

Although, this writer may agree with 90% of what Dr. Peele has to say about the addictive disorders, that remaining 10% error is deadly, for he sets biology against culture (like body against soul) and, in the process, rejects the essential relevance of biology to understanding the addictive disorders. This "disease of dualism" is well reflected in his article "Second Thoughts About A Gene For Alcoholism" in the August 1990 edition of The Atlantic Monthly which the readers of The Truth Seeker are urged to consult. (I am in agreement with Dr. Peele in his rejecting the gene theory of "alcoholism" but disagree with his position that biology is not important for understanding alcohol and other drug addictions).

The brain is the organ of behavior and of our thoughts, emotions and social/moral values even our "spirituality" which is of a human and not "divine" nature. It could not be otherwise. Individuals vary greatly in their vulnerability to the various addictive drugs and all drugs are not equally addictive to an individual, although, poly-drug addiction is commonplace. And many of these individual differences can be found in the variations of the neurobiology of brain structure and function which must be addressed in any comprehensive and systematic treatment program of drug addiction. drugs are sought to bring relief from the emotional pain of this early affectional deprivation (loss of love)

The brain is the organ of behavior and of our thoughts, emotions and social/moral values even our "spirituality" The power of the mind (brain) in the healing process has yet to be fully understood. This is particularly relevant for the control of "uncontrolled craving" which is driven at the neurobiological/neuropsychological levels. This is why certain "drugs" and acupuncture are effective in "interrupting" the craving of drug addiction which is essential to bring under control before the more endurable transformations of a social-psychological-spiritual nature can be effectively implemented. For these reasons, drugs like IBOGAINE and biochemical agents like ACTH, 4-10, deserve priority attention for objective and systematic evaluation of their potential in breaking the craving of the addictive cycle that would permit the effectiveness of other therapeutic interventions to be realized.

Finally, it is emphasized what is already wellknown: that an individual's response to a particular drug is strongly determined by the social-psychological conditions surrounding its use. The classic "placebo" response (which is real) is illustrative of this fact. The role of the religious or spiritual experience in the drug response can be considered within the same neuropsychological framework as the social-psychological set, hypnosis or the placebo effect. For these reasons, religious-spiritual dimensions of the drug experience, specifically of the hallucinogens, cannot be ridiculed as irrelevant since they must share some common brain processes involved in the socialpsychological set, hypnosis and the "placebo" response that accounts for their common therapeutic effects. The power of the mind (brain) in the healing process has yet to be fully understood.

In conclusion, it should now be apparent why the punitive, law-enforcement, imprisonment methods in dealing with the individual addict is not only doomed to failure from the outset but cannot, in any way, impact upon the development of new generations of addicts; and from a moral perspective nothing could be more immoral than to add pain and punishment to a life that is already filled with pain and punishment and that is so lacking in human love.

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# **Tabernanthe iboga: an African Narcotic**

By Harrision G. Pope, Jr. 1

Tabernanthe iboga is an apocynaceous shrub native to the forests of Gabon and the northern Congo. First described in the late 1800's, it has been reasonably well studied by botanists. The roots of T. iboga contain several indole alkaloids, of which the most important, ibogaine, is a central stimulant and in large doses an hallucinogen. In Gabon, the roots are used in the initiation rites to a number of secret societies, of which the Bwiti is most famous. The plant remains to this day a central feature of local religion, and its spectacular effects have hampered native acceptance of Christianity in Gabon.

natives claimed that the root bark was a powerful stimulant and aphrodisiac Starting in the mid-1800's, a number of French and Belgian explorers began to report a remarkable plant that grew in Gabon and the Congo. It was a shrub about 3 or 4 ft in height, found in the wild and also cultivated in the vicinity of the native huts. The natives claimed that the root bark was a powerful stimulant and aphrodisiac; it doubled their muscular strength and endurance and enhanced their sexual prowess. A few tribes, especially in the Gabon area, discovered that larger doses of the roots would produce fantastic visions, although this amount could sometimes cause death as well. They soon incorporated the plant into the initiation rituals of their secret cults.

The discovery of the plant, indeed, may not have been by man but by boars in the jungle. Several accounts mention that the natives saw boars dig up and eat the roots of the plant, only to go into a wild frenzy, jumping around and perhaps fleeing from frightening visions. Porcupines and gorillas, according to the natives, occasionally did the same thing. At any rate, the human use of the plant was widespread by the time it was first observed by Europeans.

The earliest specimens of the plant to appear in Europe were brought from Cap Lopez in Gabon by Griffon du Bellay. His description, probably the first published, appeared in 1864: "Iboga is not toxic except at high doses in the fresh state. In small quantities, it is an aphrodisiac and a stimulant of the nervous system; warriors and hunters use it constantly to keep themselves awake during night watches ..... "

In 1889, Professor Henri Baillon offered the first botanical description of the plant. He named it Tabernanthe iboga, although he cautioned that the plant might later be accommodated in the neighboring genus Tabernaemontana. Later, Stapf described a number of other Tabernanthe *sp.* (there are now seven) and stabilized the genus.

By the turn of the century, chemical investigation of the roots of *Tabernanthe iboga* was underway, and in 1901, its principal alkaloid, ibogaine, was isolated. A flurry of studies with animals showed that ibogaine was indeed a potent central stimulant. Although Phisalix suggested in 1901 that the drug could produce hallucinations, it was not until recently that the hallucinogenic properties of ibogaine were clearly established, thus confirming the many published accounts of native use of the root in initiation rites.

During this century, Tabernanthe iboga has been the subject of scores of chemical and pharmacological studies, most of them French. New observers in Gabon and the Congo have described the increasing native use of the plant. But little has been done to bring together this material, except for a few theses in French and German, all more than 15 years ago. The purpose of this paper is to present, for the first time in English, an up-to-date summary of what is known about Tabernanthe iboga<sup>2</sup>. It places special emphasis on the ethnobotanical importance of the plant, partly because this is the area of the writer's greatest interest and competence, and partly because previous work has almost entirely neglected this important aspect. As will become evident in the paper, Tabernanthe iboga has had considerable social influence in the area where it grows.

#### Botanical Aspects of Tabernanthe iboga

The following botanical material is drawn from a number of writers, notably Baillon, Landrin, Stapf, Raymond-Hamet, Delourme-Houde, and Dubois. Of these, the last is the most recent and probably the best, and hence much of this description is drawn from his work.

Tabernanthe iboga is an apocynaceous shrub, from O.9 to 1.5 cm in height, usually growing in the undergrowth of tropical forests. The leaves are borne in opposing pairs and measure about 9-10 cm long and 3 cm wide, although sometimes they reach 21 cm in length and 7 cm in width. They are oval in shape, acuminate, smooth, rather soft, yellowish green underneath. The petioles are about 0.2 cm in length. The flowers are very similar to those of the related genus Tabernaemontana, with a quineuncial calyx and a hypocraten form corolla with twisted lobes. The base of the ovary is slightly thickened, in a glandular yellow bed. The anthers are arrow-shaped and acuminate like those of Tabernaemontana. There is only one ovary, with a single cavity and two parallel placentas with many ovules joined to them on the underside. The flowers grow in groups of 5-12 on slender peduncles from the points at which the branches are joined to the stem. Indeed, several branches, a pair of leaves, and a group of flowers may grow from the same point.

The flowers are rather variable in color, from yellowish-white to pinkish-white, or sometimes white with pink patches, very small, with the calyx reaching a maximum of about 0.5 cm in length. The calyx is deeply divided into five parts which are "boga," "libuga," "bocca," "eboge," "lebogo," "lebuga," "dibuga," "diboga," "dibuyi," "dibugi," and several other similar names.

Tabernanthe iboga is often confused with T. manii and to some extent with other members of the genus. In Gabon, many tribes distinguish between the two. Walker offers the following comparison:

Tabernanthe iboga: Elongated fruits, ending in a point; corolla about 0.5 cm long. Native names: mbasoka (Mitsogo tribe), kuta mbasoke (Apindji), moabi (Bavungu), gifuma ( Eshira).

T. manii (probably): Ellipsoidal fruits, shaped like tiny lemons; corolla about 0.8 cm long. Native names: nyoke (mitsogo), dinyoke, oabe (Apindji), mungondu (Bavungu, Eshira).

It is worth noting at this point that at least one pharmacological study was carried out using *Tabernanthe manii* rather than *Tabernanthe iboga*. There is no reason to think that this investigator may have misidentified his material, inasmuch as the two plants have very similar reported pharmacological properties.

Tabernanthe iboga is a very common plant in many of the areas where it grows, although in

some parts of Gabon it has become rare as a result of excessive use. It has been reported throughout Gabon, and from a number of places in the Congo: Coquilhatville, the basin of the Nsele River, the Tshuapa, the Maringa, the Lopori, the Ikelemba, the Sankuru, and the Kasai. It is also very common in the Kwango and Kwilu areas, and also near Likimi and Ponthierville. Fig. 2 traces its known range.

# The Alkaloids of *Tabernanthe iboga* and Their Pharmacological Properties

The chemical study of the alkaloids of *Tabernanthe iboga* began in 1901 when ibogaine was isolated from the dried root material by two pairs of investigators, Dybowski and Landrin, and Haller and Heckel. Ibogaine is by far the most abundant alkaloid in the roots, and it is responsible for most of the pharmacological properties. Its structure, shown in Fig. 3, contains the indole nucleus typical of many hallucinogenic drugs. Starting in 1942 other alkaloids were found, the most important being tabernanthine, ibogamine, and iboluteine. All are quite similar to ibogaine in structure. At the present time, at least 12 alkaloids are known in *Tabernanthe iboga*.

The study of Delourme-Houde found 1.0-2.6% alkaloids in the roots and 5-6% in the root bark. These figures are probably lower than they would be for fresh material, because ibogaine tends to oxidize in solution and presumably in the undried root bark as well. The seeds contained a different alkaloid that gave strong lines in a spectrum analysis, but Delourme-Houde did not have enough material to isolate it.

The pharmacological effects of ibogaine may be divided into three parts. First, ibogaine is a cholinesterase inhibitor. This was well established by Vincent and Sero in 1942. They found that the crude extract of iboga root was considerably more potent than pure ibogaine in this respect, and they correctly theorized that other alkaloids in the extract were responsible for this difference. In 1960, Raymond-Hamet and Vincent carried out a study of the three lesser alkaloids just mentioned. All were found to be potent cholinesterase inhibitors.

In man, the principal effects noted as a result of the cholinesterase inhibition of ibogaine are At the present time, at least 12 alkaloids are known in Tabernanthe iboga.

The pharmacological effects of ibogaine may be divided into three parts. hypotension due to decreased cardiac output and stimulation of digestion and appetite.

The second effect of ibogaine, by far the most prominent, is strong central stimulation. Landrin first studied this effect in frogs, guinea pigs, and dogs. The effects were similar to a large dose of caffeine in all three animals. Toxic doses sometimes produced convulsions, almost invariably paralysis, and finally an arrest of respiration. The recent study of Schneider and Sigg, using cats and dogs, confirmed Landrin's findings. Using eight-channel electroencephalographic recording, they determined that one of the sites of action of ibogaine is in the ascending reticular formation. Studies of reflexes in this experiment excluded a strychninelike component in the action of ibogaine. This is highly consistent with Landrin's data. Landrin found paralysis rather than strychninelike convulsions in the final stage of ibogaine poisoning.

Very little has been done to study the central effects of ibogaine in man. The best information was reported by Pouchet and Chevalier in 1905. They recorded that a Dr. Huchard was using doses of 10 to 30 mg for influenza, convalescence from infectious disease, neurasthenia, and a few cardiac disorders. He found that the drug improved appetite, muscle tone, and general rate of recovery. He also noted a mild euphoria in almost all of his patients, similar to that produced by other stimulants.

By far the least studied effect of ibogaine is its ability to produce hallucinations. This was first suggested in 1901 by Phisalix. After an injection of ibogaine, his dogs acted as if they were seeing frightening things; they would suddenly begin to bark loudly at nothing, leap backwards, or try desperately to hide in a corner. Nearly 60 years later, Schneider and Sigg, in the study already mentioned, observed very similar behavioral changes in both cats and dogs. The animals exhibited ataxia, peculiar positions of the legs, partial piloerection, pupil dilation, alertness, outstretched tails, and increased respiration—a picture of fear or rage.

Of course, many of these behavioral observations could be interpreted as due to the central stimulant properties of ibogaine, or it could be hypothesized, as Tumer and Gershon and Lang have done, that ibogaine produces a severe anxiety state without actually causing true hallucinations. However, Sigg personally took a dose of 200 mg of ibogaine and described the effects.

"Subjectively, the most unpleasant symptoms were the anxiety, the extreme apprehension, and the unheimliche Grundstimmung associated with visual and bodily hallucinations. The visual hallucinations appeared only in the dark and consisted of blue disks dancing up and down the walls. Dysesthesia of the extremities, a feeling of light-weightedness, and hyperacusis were other symptoms noted. Autonomic signs, such as dryness of the mouth, increased perspiration, slight pupillary dilation, and increase in pulse rate, as well as extrapyramidal symptoms (fine tremors, slight ataxia, enhanced tendon reflexes and clonus) were also present and confirmed by Dr. Schneider. The peak effect was reached about two hours after swallowing the drug; it subsided gradually, leaving as a residue complete insomnia. No undesirable after-effects, such as exhaustion or depression occurred. It is worth noting that, unlike ibogaine, mescaline, which I took some time ago, transferred me into a quite pleasant imaginary state."

Although this is the only published account of the effects of a large dose of ibogaine on a white man, it seems clear that the drug is a bonafide hallucinogen, likely to produce anxiety. The hallucinogenic dose is several times the normal stimulant dose, so that the user must endure intense and unpleasant central stimulation in order to experience the hallucinogenic effects.

These results agree well with observations of *Tabernanthe iboga* use by the natives of Gabon. The reader will do well to bear them in mind in the consideration of the social importance of the plant, discussed in the next section.

Ethnobotanical Aspects of Tabernanthe iboga

Tabernanthe iboga is used by African natives throughout its range, and it is even exported into neighboring areas. It is probably most popular in Gabon, the only area where it has been observed to be in cultivation. The roots of Tabernanthe iboga are most widely employed as a stimulant and aphrodisiac, but in Gabon the plant is equally important as an hallucinogen.

Many writers have published glowing accounts of the stimulant properties of *Tabernanthe iboga*. For example, Steinmetz claims that it allows the

Very little bas been done to study the central effects of ibogaine in man. natives to sit awake and motionless for as long as two days while waiting for game. Brzezicki states that, by eating the roots, the natives manage to double the length of their day's march and the weight of what they are carrying without noticing the extra effort required. Although both of these descriptions may reflect some local hyperbole, they are reasonably consistent with the pharmacological findings.

Dybowski and Landrin, who originally isolated ibogaine, also consulted with the natives and recounted their replies as follows: "When asked by us, they always replied that the action of iboga was identical to that of alcohol, but without disturbing the thought processes." These researchers concluded this to mean that the plant was a simple stimulant. It seems though, that the natives would have been more likely to compare the plant to the cola nuts (Cola nitida), with which they were familiar, rather than to alcohol, if they were seeking to describe a purely stimulating effect. On the basis of pharmacological evidence, it seems likely that even small amounts of iboga would produce marginal hallucinogenic effects, possibly a "dreamy" or "floating" sensation. This may explain why the natives chose to compare the effects to alcohol, rather than to the caffeine in cola nuts.

Iboga is greatly prized by the natives as an aphrodisiac. Indeed, Burckhardt claims that it is "even more highly valued than yohimbine," a constituent of *Corynanthe yohimbe*, probably the most famous of African "aphrodisiacs." There is no pharmacological evidence that ibogaine directly stimulates sexual functions, but the increase in confidence and lack of fatigue produced by its stimulant properties may easily account for its reputation. It is also possible that its hallucinogenic effects contribute. In other parts of the world, plants with primarily hallucinogenic effects, such as *Cannabis sativa*, have been claimed to be aphrodisiacs.

The most interesting use of iboga, however, is as an hallucinogen. Probably the first report of such utilization is that of Guien, who describes an initiate in a fetishist cult: "Soon all his sinews stretch out in an extraordinary fashion. An epileptic madness seizes him, during which, unconscious, he mouths words, which, when heard by the initiated ones, have a prophetic meaning and prove that the fetish has entered him."

Although Guien's description came from the Congo, near Ayenie, the center of use of iboga as an hallucinogen is Gabon. There, it is employed in the initiation rites of secret societies, the most famous of which is the Bwiti (also spelled Bouiti or Buiti). The story of *Tabernanthe iboga* in the Bwiti cult is a fascinating one, showing how a seemingly unimportant plant can have far-reaching social effects.

The Bwiti cult originated probably either among the Mitsogo or the Apindji in central Gabon, in the area where iboga is most abundant. The cult has spread throughout Gabon during this century, and it now extends from Spanish Guinca to the Congo. It is best observed in the center of its influence, among such tribes as the Apindji, where it was recently studied by Swiderski. His description is one of many but, since it is one of the best, it is partly reproduced here.

To eat the iboga plant is the only way to see the vision of Bwiti, according to the lore of the cult. On the day of the initiation, the candidates go to the "temple of the universe" accompanied by their fathers and maternal uncles at six o'clock in the morning. There they are given two shallow baskets, each about 8 inches in diam, filled with raspings of iboga root. The priest stands in front of the boys and says, "See this stuff at your feet which you must like even though it tastes as repugnant as heavy oil. If I give it to you, will you consume it?" The boys reply, "Give, and I will consume it gladly." The priest responds, "Take it then, but with the mouth, not the hands."

Under the surveillance of the priest, fathers, and uncles, the boys gulp down the bitter and vile-tasting raspings. Throughout the day, the boys continue to eat iboga roots, encouraged by their guardians. It is not until late in the day that the candidates have eaten enough iboga to be able to see Bwiti.

The candidates begin the evening ceremonies with a ritual dance which includes all the members of the Bwiti in the tribe. At the end of the dance, the boys go off to a specially prepared hut where they eat still more iboga. A vigorous and joyous dance follows, and then, towards nightfall, the *lomba*, the central part of the ceremony, begins. A sorcerer dances for two even small amounts of iboga would produce marginal ballucinogenic effects, possibly a "dreamy" or "floating" sensation hours and invokes the ancestors of the members. Then everyone participates in a torchlight dance. Amid the flames of the torches and the beauty of the equatorial night, with the effects of the iboga coming to a peak, the candidates begin to enter a trance. Soon everyone is silent; only the melody of the *mongongo*, a sacred harp, is heard. The candidates begin to murmur among themselves, for they are beginning to see Bwiti. The visions continue for several hours, followed by a sleep which may last for five to seven days.

There are many variations in this pattern. Sometimes, the initiate is sent into the forest for several days after eating the iboga. Sometimes the iboga is mixed with other plants, such as *Alchornea floribunda*. Like iboga, this plant is also considered an aphrodisiac, especially among the Eshira, who use it frequently. It may well be an hallucinogen, too, because it is used in almost precisely the same way in the initiation to another secret society, the Byeri, which is prevalent among the Fang and the Eshira. Some concoctions in Gabon may involve as many as ten plants. Many valuable drugs may await discovery in this area.

The sacred iboga appears at several other points in the life of the Bwiti. Sorcerers employ the iboga before demanding information from the spirits. The leaders of the cult cat iboga for an entire day before asking advice of the ancestors, topping it off with an infusion of the root bark, which is served in a manner similar to the Christian communion.

It is a striking fact that the Bwiti cult has been expanding rather than disappearing during the past 50 years, despite a great deal of missionary effort. It (BWITI) has become probably the greatest single force against Christianity in Gabon, backed by the proverb, "Iboga and baptism are not compatible. The cult has adopted many of the rituals of Christianity, sometimes deliberately parodying them, and woven them together with the old beliefs. In recent years, the cult has helped to unify all the tribes against the innovations of the West. Some have wondered where it could get such an appeal, but this is not hard to see when one considers its powerful rituals, its promises of actual visions of God under the influence of iboga, and compares them with the unexciting alternatives of Christianity. Iboga and baptism are indeed incompatible, and there is little question as to which would appeal more to an African tribesman. Perhaps the most striking account of this comes from Georges Balandrier's account of recent developments in Gabon: "This new faith exerts an undesirable attraction in several districts. It creates outlets for intense energies and demands those extreme psychological experiences which the Negro likes periodically to undergo. It demands a complete transformation of self, a liberation from a standardized and difficult existence. It restores order and confidence where the forces of disorganization,—and hence of insecurity—have flourished."

Here is Balandrier's description of an allnight ceremony in one of the largest temples of Southern Gabon:

"The priest and his assistants had made their preparations in a private place. They had shared a concoction made from the grated rind of a plant named iboga (*Tabernanthe iboga*), a hallucinogen and an aphrodisiac. Their interminable dancing would reinforce these effects and carry them all, so they said, to the frontiers of true understanding and to the sources of power..."

"Then the dancing began around each of the poles dominating the architecture of the temple, a series of jumps, stamps, leaps, and movements, which might be described as compulsive. The torsos of the men streamed with sweat and their muscles stood out under the play of the lights. From time to time one of them rushed over to a pail of water, drank great draughts, and then resumed his intoxicated motion. The congregation sang and accompanied the priest by dancing in place. The women shook their rattles, the only instruments which provided an occasional musical accompaniment. The rhythm accelerated. The group had become a single creature, tensed for an impossible victory. I felt profoundly foreign, separate, trapped by my human dignity, encumbered by a body which had lost even the memory of its glorious potentialities. I felt like a kind of cripple to whom no one could pay even the slightest attention.

"What does our civilization offer that is capable of arousing a fervor of this kind, an involvement spelling adventure for the body as well as the mind? Our churches put inner life and moral principles

It (BWITI) has become probably the greatest single force against Christianity in Gabon

a little known jungle plant bas helped to unify an entire people and to block successfully some of the influence of our own civilization ahead of that exaltation which leads to the threshold of unconsciousness. They seem cold, devoid of supernatural presence, ill-suited to impassioned communion. In the eyes of the villagers, the missionaries are so many "wet blankets" in the celebration of the fulfillment of man and the glory of the gods."

In this way a little known jungle plant has helped to unify an entire people and to block successfully some of the influence of our own civilization Unless there are profound changes in missionary policy or in the Bwiti cult, it will continue to have a great deal of social importance in Gabon.

#### Acknowledgments

It would be impossible to enumerate in a brief space all of the people who have helped me in this work. In Europe, a number of people have helped me to obtain necessary references: Dr. J. P. M. Brenan in England, Dr. A. Lawalree in Belgium, Dr. Roger Heim, Dr. Jean Delourme-Houde, M. R. Duclos in France, and Dr. Albert Hofmann in Switzerland. At Harvard, the entire staff of the Botanical Museum has been very helpful, especially Miss Irene Brady, who drew the second figure on very short notice, and Mrs. Lillian Hanscom, who retyped my often cryptic manuscript. Most of all I want to thank Dr. Richard Evans Schultes for his encouragement and advice over a period of many months. Without his help, this paper could never have been written.

#### **Editorial Note:**

The above article first appeared In *Economic Botany*, 1969, XXIII, 2 (April-June) pp. 174-184 and is reprinted in its near entirety with permission. A map that specified the geographical locations of T. Iboga and associated text has been omitted because of space considerations. The references to this article can be obtained by writing *The Truth Seeker* P.O. Box 2832 San Diego, CA 92112-2832.

- Botanical Museum of Harvard University, Cam bridge, Massachusetts. A term paper in Biology 104, "Plants and human affairs," Harvard University, 1968. Received for publication September 30, 1968.
- 2. Translation mine for all French references.

# NATIONAL LEAGUE FOR SEPARATION OF CHURCH AND STATE

The assaults against our religious freedoms and liberties have never been so great as they are today. The recent decision of the U.S. Supreme Court that banned Peyote as a Sacrament of the Native American Church and which established for the first time a lawful basis for "respecting an establishment of religion"—majority religions vs. minority religions—signals the dire peril that confronts our religious freedoms and liberties.

Central to our religious freedoms and liberties is our "BODY PROPERTY RIGHTS' which must be free from the tyranny of the political and religious states. It is this fundamental issue that underlies the most significant conflicts of our time: 1) the right of women to be mothers by choice; 2) the right of privacy to the expression of sexual affection and love among mutually consenting persons; 3) the right to ingest substances that promotes the psychological, religious and spiritual journeys of the individual and which do not bring harm to other persons; 4) the right to be free from "torture or to cruel, inhuman or degrading treatment or punishment" (genital mutilations) for religious, social or cultural reasons; and 5) the right to peacefully and humanely terminate one's life.

These are the five major projects that will be addressed by the NATIONAL LEAGUE FOR SEPA-RATION OF CHURCH AND STATE and your membership and support is requested. Your membership in the NLSCS which includes a subscription to The TRUTH SEEKER is \$35.

 $\mathbf{A}$ dditional contributions are welcome.

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# Tabernanthe Iboga: Narcotic Ecstasis and the Work of the Ancestors

By James W. Fernandez

Relevance of the Pharmacological Properties of Iboga to the Purposes of the Bwiti Cult

There is a puritan element in this cult that denigrates the physical body Differences in set, setting, and situation account for the considerable differences in the *iboga* experience itself from cult house to cult house and from one branch of Bwiti to another. Nevertheless, there are certain physiological reactions common to most hallucinogens, whether tetrahydrocannabinol, mescaline, LSD, or ibogaine. I would like to list these as they are commonly put forth in the literature\* and then offer an indication of how the cult of Bwiti turns these to its own uses, giving them an interpretation suitable to its purposes and its members' needs and expectations.

- I. Somatic changes
- 2. Body perception
- 3. Visual changes
- 4. Time perception
- 5. Dissociation-detachment
- 6. Hearing, smell, and taste synesthesia
- 7. Task performance
- 8. Moods and emotions

\*As for example in Hoffer and Osmond, *The Hallucinogens* (1967).



#### Somatic Changes.

The apparent suppression obtained by eboka, even in mild dosage, of tissue-deprivation impulses, as well as its depressive effect upon certain autonomic processes, cardiac output, etc., enables the members to maintain a high level of engagement in the ritual development over a long period of time without complaint or fatigue. There is a puritan element in this cult that denigrates the physical body and regards the soul (nsisim) as englutted by corporeality. It is a clear objective of cult life to escape to higher and better things. The extra-corporeal floating feeling obtained by eboka serves this ecstatic objective very well. Eboka is often said to be an aphrodisiac, but there is no evidence in Bwiti that this is the case. The set and situation of the cult emphasize chastity, and the cultural setting sublimates sexual impulses into symbolic statements. To the degree that eboka is an aphrodisiac (probably only in the relaxed endurance it gives), it would work against cult purposes. It cannot be, in any case, a sufficient aphrodisiac to break through the Bwiti set, situation, and setting.

#### **Body Perception.**

In regular dosage, there is little change in body perception other than that subsumed under somatic change. The body feels lighter. Heavier dosages produce a feeling of elongation accompanied by feelings of floating. In the very heavy dosages of initiation, the perception of one's own figure and face in a mirror (employed primarily in MBiri) or of one's fellow worshipers is so drastically altered as to convince the initiate that he has seen the ancestor. It is of interest to note that mirrors have been used in the measurement of body perception in laboratory experimentation on hallucinogens.

#### Visual Changes.

The spectrums on the margins of perceived objects that are often produced by hallucinogens do not become evident with *eboka* until high dosage. But in initiation doses, spectrums, or rainbows, are often reported in objects, roads, rivers, and animals. These spectrums are taken by the banzie as indications that the user is approaching the precincts of the dead and the great gods.

#### **Time Perception.**

The timing of ritual activity is highly important, for the cult succeeds only insofar as it approximates the ritual of the other world. Alarm clocks are kept in most chapels to ensure that timings are exact. Hallucinogens tend to increase the sense of elapsed time as compared to "real" time. This effect is most apparent under initiation dosage; it is the impression of the initiates that they are involved in their spiritual journeys for many hours, if not days.

Toward the end of her initiation and under the influence of a full dose of eboka (Tabernanthe iboga), the initiate stares intently out of the chapel, waiting for her ancestors to "arrive."



Because white is the color of the ancestors, she has been painted all over with kaolin. Behind her sits the nyia-eboka, her "mother of eboka," who gives her encouragement.

#### Dissociation-Detachment.

Even under light doses, he who takes *eboka* experiences some dissociation and sense of detachment. The feeling of "here I am and there is my body going through its actions" is reported by members as a happy indication that the soul will shortly mingle with the ancestors at the roof of the chapel—one of the declared objectives of Bwiti. The sense of dissociation directly moves toward that objective. There is a feeling of escape from burdensome individuality in such dissociation. This fits in with the desire of the cult to achieve *nlem mvore* (one-heartedness) in the membership. The consequences of the drug in this area thus serve the communal objectives of Bwiti and enable it, in the members' view, to combat more effectively what they regard as the excessive economic and organizational individualism of transition from traditional tribal culture to membership in a modern state on the Western model.

#### Hearing, Smell, and Taste Synesthesia.

I have little data on sharpened or synesthetic perceptions of smells and tastes. Hearing seems to be affected with large doses, which produce a loud buzzing. Tumult is often reported. With regular doses banzie claim that they can hear the cult harp more clearly and more beautifully. They say that the strings are the voice of Nyingwam Mebege, the female principal of the Universe, who speaks to them. Synesthesia, the effect when one sense mode seems to harmonize or integrate with another, is not reported. However, it would seem to accord with the effort of many cult leaders to convince the membership that Bwiti proves all things are one rather than many.

#### Task Performance.

There is high emphasis in Bwiti on performing the ritual task in such manner as to achieve a sense of wholeness, which we might call logico-aesthetic integration. Heavy doses of *eboka* are therefore discouraged as a general practice. But light regular doses, by suppressing fatigue and excessive autonomic claims, would seem to add to the capacity to concentrate upon the ritual work at hand. he who takes eboka experiences some dissociation and sense of detachment

#### Moods and Emotions.

All the possible physiological effects are meaningless unless we understand the context in which they appear. In respect to moods and emotions, the context of taking eboka is especially important. We have indicated that some cult houses are so careful in regulating context-providing solicitous mothers and fathers of eboka- that there is hardly a bad trip. In others, more neglectful, initiates often abandon their initiation in mid-flight through sickness or terror. But there is always some somber apprehension and anxiety involved in taking massive doses of eboka in any cult house, because of its reputation for causing deaths. For the rest of the membership, however, the mood is generally euphoric, especially in the last hours before sunup. Members look forward with a fine appetite to the communal meal after the rituals. However, the beauty and integration achieved in this cult by dance and song are virtually sufficient in themselves to achieve euphoric results, even without eboka.

#### Conclusion

A certain regret underlies this account of Bwiti eboka. I worked for many, many months with the



Fang and in Bwiti—a people and an institution I esteem. But I ate only modest amounts of *eboka*, and I never experienced any soaring ecstasy, any weighty meaning, any visions of my own awesome

dead or theirs. *Eboka* had a very bitter taste to me. It made me slightly nauseated. And I was never inspired to go on and follow that road it opens up with large doses.

Why was this? First of all, the richness of Bwiti liturgy and cosmology was standing before me to be described and worked out. This challenge alone lifted me on every cult night to a plane of very intense experience of other cultural realities in which my emotions and my intellect were sharply stepped up, so that I felt no need for any narcotic excursions. But, further, it is now clear to me that my attitude set was inappropriate to the drug. Although my wife and I tried to establish participation with the Fang in every respect—living their village life as we could and dancing in the cultnevertheless, in the end, our communion with them was conditioned by the fact that I was the agent of a Western scientific culture. This is an inescapable form of separation that operates in the work of an anthropologist. I suppose my resistance to the drug was the result of a commitment to objective observation. The subjective revelations promised me at the time by the drug seemed irrelevant to my task. I failed to appreciate eboka's usefulness in stimulating all-night inquiry.\*

It now strikes me with all the force of the obvious that science itself surely required that I explore the properties of this plant in every possible way. Of course, from the Bwiti point of view, one is not being honest with *eboka* if one takes it only in the chaste spirit of inquiry. One takes *eboka* because one needs to see, to know, and to communicate with greater powers that are hidden in it and known through it. As, in the end, an agent of science, I felt no such needs. Because of significant differences in set, situation, and setting, taking the drug in the spirit of professional inquiry can never produce the same experience as a banzie achieves.

Of course such considerations as these are very far from the Bwiti point of view. Members of this cult take *eboka* because they believe it to be a very powerful instrument of their intentions. We may argue from our view that taking the drug is an expressive form of communion achieved by exteriorizing interior states. It really, after all, does not change much in the object

\*See above for similar observations by Sharon.

taking the drug is an expressive form of communion world, and surely Africans in this modernizing period are challenged with the necessity of making changes in that world. In fact, the Gabonese elite generally deprecate Bwiti because banzie "work no more" and are no longer of use to the national enterprise. The banzie, on the other hand, cannot agree with this criticism, for they are seriously engaged in the "work of the ancestors," which they do not regard as selfindulgent. As for the taking of the drug itself, which is also excoriated by the elite, the banzie would have support from the pre-World War I colonial Germans, who found it a useful drug at certain levels of ingestion.

In view of the widespread drug abuse in this country-by no means only in the hallucinogens-it may be salutary to emphasize again that the Bwiti cult in most of its branches carefully controls members' uses of eboka. The "work of the ancestors" can easily be harmed by an overdose. Only initiates are free to pursue the potentialities of eboka virtually to the limit of their powers. For another kind of ecstasis, perhaps more satisfying and enduring, is to be achieved in the cult, and that is the ecstatic satisfaction of a logically and aesthetically whole performance of the ritual task. One qualifies for participation in that ecstasis by a staggering dose of eboka. But one achieves it periodically only by very modest amounts.

All this would seem to launch us, as anthropological presentation so often does, upon the high seas of ontological relativism, for we have two definitions of work and two definitions of ecstasis. One man's work seems to be another man's play. And there seems to be an ecstasis of interiorization and an ecstasis of exteriorization. I propose two axioms to put us at ease and prepare us for the future:

1. Since any drug, including the hallucinogens, can be used or abused, we may, in the end, judge the difference between use and abuse only in relation to a culture's definition of work or pleasure. Hence, although there is a bit of a tautology involved; a drug is abused when it ceases to facilitate work as a culture defines that work.

2. Men universally try to manifest in themselves, and to work with, the optimal mix of



Peter T. Furst

instrumental and expressive tendencies. Cultures differ from one to another in their notion of the optimal mix, and over periods of time change that mix. One source of change, the essence of revitalization, arises when the hard facts of reality, developing either out of the culture's own processes or by imposition from without, prove intractable in men's attempts to work with them or within them. The colonial reality proved especially intractable to the Fang, just as for many Americans today the harried, highly organized industrial juggernaut of our culture proves intractable in their attempts to work within it to any satisfaction. Some Fang and some Americans, therefore, turn away to a drug is abused when it ceases to facilitate work as a culture defines that work search for and express a new reality. They have found drugs very useful to that task—although in the end ceremonial events, song and dance, may have as great a power. Hence, the mix of instrumental and expressive modes of being in any culture is dependent upon the satisfactions of the work of that culture and the ecstatic possibilities found in that work.

we may, in the end, judge the difference between use and abuse only in relation to a culture's definition of work or pleasure

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The author is currently with the Department of Anthropology, University of Chicago. The above article was excerpted from the author's much longer essay: "Tabernanthe Iboga: Narcotic Ecstasis and the Work of the Ancestors". In: *Flesh Of The Gods*. (Peter T. Furst, ed). Waveland Press, Inc. P.O. Box 400 Prospect Heights, IL 60070 (1972, Reissued 1990). Reprinted with permission.



Crucial to the understanding of the religious imagination, the author argues, is a knowledge of the historical, social, and cultural matrices from which is arises. Accordingly, his book explores the Fang culture of Gabon as a set of contexts from which the Bwiti religion emerges. In addition to experience with missionary Christianity, Bwiti uses a great reservoir of images and ideas from its own past. Professor Fernandez analyzes how they are recreated into a compelling religious universe, and equatorial microcosm.

Princeton University Press, 1982 Princeton, NJ

# **Drugs, Religion, and the Healing Process**

by James W. Prescott

The choice of religious belief, sacramental drugs and the spiritual transformation of the individual is culturally determined.

The social-political structure of a culture is a major factor that determines the acceptability and non-acceptability of certain religious beliefs and customs, use of sacramental drugs, and the spiritual paths that are permitted to be pursued. The American culture is similar to many other cultures with respect to these issues, despite its Constitutional law of separation of church and state.

The tolerance and active support of two very dangerously addictive drugs, alcohol and nicotine by the American Culture with its concomitant rejection and criminalization of a nonaddictive and relatively benign drug, marijuana is a case in point. Similarly, with the rejection of heroin and the acceptance of methadone which are both highly addictive drugs and where methadone is considered by some to be as equally harmful as heroin. In a previous essay by this author: "Failure of Pleasure As A Cause of Drug/Alcohol Abuse & Addiction", the reasons for America's cultural choice of and rejection of these drugs was given with an explication of the religious roots that influence why certain drugs are acceptable and others are not to a given culture. Among these roots is the reciprocal relationship between pleasure and violence: drugs that promote pleasure are prohibited (marijuana/heroin); drugs that eliminate pleasure and promote violence are acceptable (methadone/ alcohol). America is still very much a puritanical and violent culture which strongly influences its drug choices. Marijuana not only promotes pleasure but it is also one of the most effective and safe anti-aggression and anti-violent drugs available. (Prescott, 1975, 1980, 1989, 1990; Secretary, DHEW, 1971)

One of the most dramatic cross-cultural documentations of the religious factors that determine the acceptance and/or rejection of alcohol or bhang (marijuana) use was published by George Morris Carstairs, DPM, FRCP: "BHANG AND ALCOHOL: Cultural Factors in the Choice of Intoxicants (1966). In that paper he described how and why the two ruling classes in the State of Rajasthan, Northern India were diametrically and angrily opposed to each other in their choice of daru (alcohol) or *bhang* (marijuana) for consumption.

The Rajput class was the warrior class from which came the *Rajahs* or the rulers of society. As fighting men, the Rajputs had certain special prerogatives to eat meat and drink alcohol. Before taking the first drink, alcohol was offered to invoke the demon-goddess *Kali* in her local embodiment as both mother and destroyer who "relishes a diet of blood and alcohol." In stark contrast, the members of the other high castegroup in the village, the Brahmins, unequivocally denounced the use of daru (alcohol).

Carstairs continues his commentary: "It (daru-alcohol) is, they say, utterly inimical to the religious life—and in matters of religion the Brahmins speak with authority. Certainly no Hindu who has tasted or even touched daru will enter one of his temples (not even a goddess temple) without first having a purificatory bath and change of clothes. The first requirement of those who begin to devote themselves seriously to religion is always: "Abhor meat and wine." Priests and holy men insist that a darulia (an alcoholic) is beyond the pale of possible salvation. And yet again and again the writer was able to see respectable Brahmins and holy Saddhus who were benignly and conspicuously fuddled with bhang. To his eye, they were drunk as lords—drunk as Rajputs—and yet they would have been mortally offended if the comparison had been drawn, because this form of intoxication they believed to be not only no disgrace, but actually an enhancement of the spiritual life."

Other examples could be cited, for example, Carstairs' comments on Aldous Huxley's (1954) description of mescaline intoxication which he regarded as a "gratuitous grace" which "facilitates the sort of mystical experience which he finds both chastening and rewarding, in much the same way as Brahmins and Saddhus regard bhang as an aid to contemplation." Although, Huxley expressed the hope that Westerners would abandon alcohol and tobacco for the more mystical mescaline, Carstairs rightly observed that this would be highly unlikely given the fundamental differences in basic values of life that are reflected in the use of these substances. America is still very much a puritanical and violent culture which strongly influences its drug choices. Another dimension of the historical roots of the role of drugs with the religious experience has been identified by John Marco Allegro in "The Sacred Mushrooms and the Cross" (1970). In that treatise he outlined the connection between the plant hallucinogens, superstition and the rise of the monotheistic religions. Allegro's contributions will be the subject of future essays in The Truth Seeker.

When does a drug which has historically been used as a "sacrament" in a given religion now become unacceptable or even become a criminal act for that culture? The suppression of certain "sacraments" and religious rituals within a sub-culture (which inflicts no harm upon others) by the political state of the larger culture certainly must constitute state interference with religious beliefs and practices. For the American Culture this constitutes a violation of the separation of Church and State where Article 1 of the Bill of Rights states: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof..."

Despite this Constitutional protection that the State cannot prefer one religion and its practices to another, the United States Supreme Court in "Employment Division, Department of Human Resources of Oregon, ET AL. v. Smith Et AL (Decided April 17, 1990) ruled that Peyote, an hallucinogenic drug and a sacramental substance in the religious rituals of the Native American Church, was unlawful and, therefore, not a protected religious belief/activity. In reaching their conclusion, the Court's majority found that the defense's claim to First Amendment Rights to the free exercise of religion in the use of Peyote as a sacrament was a "constitutional anomaly" since it would confer "a private right to ignore generally applicable laws"; and offered other unprecedented arguments. Among these was that the free exercise of religion is a "luxury" that a well-ordered society cannot afford and that the restriction of minority religions is an "unavoidable consequence of democratic government".

In the minority opinion written by Justice Blackmun with whom Justice Brennan and Justice Marshal joined, they dissented, in part, as follows: "In short, it (majority opinion) effectuates a wholesale overturning of settled law concerning the Religion Clauses of our Constitution. One hopes that the Court is aware of the consequences, and that its result is not a product of overreaction to the serious problems the country's drug crises has generated." And: "I do not believe the Founders thought their dearly bought freedom from religious persecution a "luxury," but an essential element of liberty—and they could not have thought religious intolerance "unavoidable," for they drafted the Religion Clauses precisely in order to avoid that intolerance."

The Minority Opinion of the Court held that the "compelling government interest of the highest order" test had not been established nor was the Sherbert test met for the government to burden religious beliefs or practices, specifically, "religiously motivated conduct may be regulated where such conduct 'pose(s) some substantial threat to public safety, peace or order".

The reader is encouraged to read the majority and minority opinions in this extraordinary Supreme Court decision which for the first time has given legal preference to "majority" religions vs. "minority" religions and which denies the use of certain drugs as "sacraments" in rituals of "minority" religions but approves the use of other kinds of drugs used in the rituals of "majority" religions. In this context, the minority opinion specifically noted that the sacramental use of wine by the Roman Catholic Church was exempted from the National Prohibition Act that prohibited the use of alcohol.

The above review is background to understanding the anticipated rejection of *Tabernanthe iboga*, an hallucinogenic drug to promote a spiritual journey and transformation of the individual, by the social-political structure of the American Culture which has become increasingly and unconstitutionally biased in favor of Christianity. This is particularly the case for *Tabernanthe iboga* where authorities on its use have noted that its use "has become probably the greatest single force against Christianity in Gabon, backed by the proverb, "Iboga and baptism are not compatible." And: ""In recent years, the cult (Bwiti) has helped to unify all the tribes against the innovations of the West" (Pope, 1968).

the Court's majority found that the defense's claim to First Amendment Rights to the free exercise of religion in the use of Peyote as a sacrament was a "constitutional anomaly" In contrasting the African religion of Bwiti with that of the West, Balandrier (cited by Pope) makes the following conclusions on his description of an all-night ceremony in one of the largest temples of Southern Gabon:

"What does our civilization offer that is capable of arousing a fervor of this kind, an involvement spelling adventure for the body as well as the mind? Our churches put inner life and moral principles ahead of that exaltation which leads to the threshold of unconsciousness. They seem cold, devoid of supernatural presence, ill-suited to impassioned communion. In the eyes of the villagers, the missionaries are so many "wet blankets" in the celebration of the fulfillment of man and the glory of the gods."

Pope (1969) concludes: "In this way a little known jungle plant has helped to unify an entire people and to block successfully some of the influence of our own civilization."

What can be concluded from all of this? And what are its implications for the drug abuse problem in America; its current drug war; the use of "hallucinogenics" within a spiritual (not to be confused with the historical "religious" or "supernatural") journey of personal transformation; and the religious-political bias that exists for the use and non-use of certain drugs in our culture?

Given the extraordinary linkage of the use of drugs in spiritual rituals that provide a direct connection to "god", without the intervention and controlling influence of the agents of god (rabbis, priests, ministers, mullahs), it can be better appreciated why Christianity is opposed to these religions and their drugs. Similarly, it can be understood why the current members of the U.S. Supreme Court (which favors Christianity) will also reject the use of those drugs used in the spiritual rituals of "minority" religions which are opposed to the Christian religion and its authoritarian control of the people.

Thus, the current political-legal opposition to certain drugs, e.g. marijuana and the hallucinogens must be re-evaluated within the context of a Christian religious bias that is discriminatory toward "minority" religions and their particular choice of "sacramental drugs". Why should the Christian bias toward the use of alcohol (wine), as a sacrament, be given Constitutional preferential protection while other drug preferences, as a sacrament of different religions, e.g. peyote, marijuana, mushrooms, mescaline, ibogaine, etc. are denied equal Constitutional protection? Certainly, the religious preference for certain drugs, as sacraments, constitute a significant issue for the separation of church and state.

From a secular perspective, a re-evaluation of the "spiritual state", as pursued within the traditional religions, is in order. Specifically, the understanding of the phenomena of "altered states of consciousness"-a "spiritual" state-, as a natural neuropsychological brain state, would advance substantially the replacement of the "religious" experience as a phenomena of the "supernatural". For example, a priority study of the effects of Tabernanthe iboga on brain function should involve a PET scan that would identify the specific brain structures that are primarily activated by this drug. From my previous studies and given the subjective reports of the Tabernanthe iboga experience that involve sensations of "extra-corporeal floating"; "the body feels lighter"; "dizziness"; "nausea"; "ataxia" and "disassociation" all implicate the cerebellum—a brain structure that I have proposed as a master integrating system for sensory-emotional-cognitive and motor processes. The cerebellum is the brain structure that is uniquely designed to integrate the conscious brain with the sub-conscious brain provided the appropriate neuropsychological state is present

Stan Gooch, a psychologist, has also implicated—from a different perspective—the cerebellum as a principal brain structure in the mediation of parapsychological and "spiritual"phenomena (*The Double Helix of The Mind*, 1980) and other works.

Tabernanthe iboga may well stimulate that neuropsychological state and objective scientific studies of brain function can verify the role of the cerebellum and other brain structures in the Tabernanthe iboga experience. Similar studies of brain function with the other hallucinogens would provide scientific bases to understanding the alleged "religious-spiritual-supernatural" experience precipitated by these drugs and their therapeutic "transformational" effects. "Iboga and baptism are not compatible."

the religious preference for certain drugs, as sacraments, constitute a significant issue for the separation of church and state

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