OLD AND NEW WORLD HALLUCINOGENS: A statistical Query and an Ethnological Reply

By *Weston La Barre* [1]

In the Spring of 1935, a Harvard undergraduate wrote me at the Yale Graduate School: could he go with me on an American Museum of Natural History fieldtrip (his first, my second) to the Kiowa Indians? And so we did, the following summer. Thus began more than a half-century of interdisciplinary cooperation and professional friendship. I take considerable pride in the event, though it is hardly necessary to point out that on his own, Richard Evans Schultes later became undoubtedly the most distinguished ethnobotanical fieldworker of his generation. The benefit was mutual and we learned from one another.

When, two years later as Sterling Fellow, I went to South America, I made a large (but, botanically, woefully inadequate) collection of Aymara Indian *materia medica,* mostly botanical. From my fragmentary specimens collected directly from Indians, Schultes made spectacular identifications which enabled publication.[2] The ethnologist was not a botanist. Thus, at his expense, I gained some belated notion of what constitutes a properly ethnobotanical collection. And the botanist was not an ethnologist: I chided him for evidencing an ethnocentric connotation of "medicine" which, for American Indians, means a supernaturally –not pharmacologically-operating substance– the sometimes subtle distinction between a native (emic) and a scientifically objective (etic) conceptualization.[3] I had maintained that *Lophophora williamsii* was claimed as a "medicine" in strictly Indian terms. I was doubtless right ethnographically. Yet, ironically, it transpired later that some of the *Lophophora* alkaloids, now about thirty in number, *were* pharmacologically medicinal. I was right emically, but Schultes was equally right etically. I think the latter counts for more, in the long run, though Schultes has profited enormously from his respect for native emic cues: a native pharmacopoeia is certainly richer for etic purposes than a random sampling.[4]

On a larger question –that of native areas of probably greatest knowledge and use of botanical hallucinogens– the botanist and the ethnologist saw eye to eye from the beginning. The Aztec area had obviously been the most studied, yet once the significance of Andean (Aymara) botanical *materia medica* had been established, then ethnographic logic would argue that the intervening Chibchan-Colombian area should have been stimulated diffusionally by both flanking Aztec and Andean. Thus when on the grounds of ethnobotanical fieldwork Schultes ventured the judgment that Colombia was probably that area of greatest native knowledge of hallucinogens[5], I agreed with him immediately[6]. Though on different grounds, we came to the same conclusion.

The mutual respect of botanist and ethnologist is thus fully understandable. I daresay no informed person will disagree with my judgment that whereas Schultes and Hofmann's *Botany and Chemistry of Hallucinogens* is the standard scientific authority in the field, their *Plants of the Gods: Origin of Hallucinogens* is surely the finest book for the general reader, along with Schultes' elegant summary in *Hallucinogenic Plants*[7]. Schultes has been reciprocally appreciative of La Barre[8].

The peak of our collaboration was reached in our pondering over a puzzling statistical discrepancy. As early as 1963, Schultes wrote:

> It is of interest that the New World is very much richer in narcotic plants than the Old and that the New

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> World boasts at least 40 species of hallucinogenic or phantastica narcotics[9] as opposed to half a dozen species native to the Old World[10].

The reason for this marked discrepancy is by no means immediately evident. In fact, one might reasonably suppose the reverse to be true.

That is, the Old World has a far greater land mass than the New, and certainly as varied climates and ecologies –and hence the apparent possibility of a greater number and variety of plants. Furthermore, men and proto-men who might have discovered the properties of those plants that are narcotic have existed for an incomparably longer period (from the Australopithecines and *Homo habilis* onward) in the Old World than in the New (only from the late Paleolithic and Mesolithic onward). Thus, on geographic-ecological and botanical as well as anthropological grounds, the Old World *prima facie* should hold more psychotropic plant species than the New– which is quite contrary to the apparent facts.

On returning to the problem in 1955, Schultes cited the statistics again but continued:

> the foregoing statistics relate merely to those plants the narcotic properties of which man has discovered in his trial and error experimentation during human history. Is there any reason to presume that man in a primitive state of culture possesses any peculiar intuition enabling him to uncover more efficiently than his more civilized counterpart those plants that Nature has endowed with physiologically active principles?[11]

There is, I think, an answer in this. But not to our question. It may well be that Paleolithic hunters and gatherers of plants were oftener under hunger pressures to experiment with potential foodstuffs than are their Neolithic descendants more abundantly supplied both with their staple cultigens and their domesticated animals. But as to plant knowledge, are not later folk the cultural heirs of earlier ones? And for both food and narcotic plants, the Old World has contained primitive men questing to find them for a longer period than the New.

The value of Schultes' caution on the limited scope of trial and error as opposed to systematic enquiry is plain, for the one is old and the other quite new. It leaves open the possibility that, were human knowledge not grossly incomplete, then the Old World might in fact contain an appropriately larger number of psychotropic plants. But Schultes would be unwilling to hold that trial-and-error would be likely to result in the statistical discrepancy he points out, whatever a longer systematic enquiry might discover.

Be that as it may, his thinking contains, in my opinion, the germ of understanding –the differential factor is perhaps human, *viz.* at whatever level, one of human knowledge– if only we dichotomize not primitive and civilized man but rather discriminate among some (primitive) men and others ethnographically. We already have small-scale evidence of the possibility. Thus even in the same ecological region or "culture area", contiguous tribes may differ markedly in their folk-knowledge of plants. For example, the Cherokee of North Carolina retain much of their rich *materia medica* of plant origin, but the Catawba of South Carolina are culturally impoverished in this respect. Cherokee consequently call the Catawba "ignorant", and Catawba call the Cherokee "superstitious" in the use of folk simples.

Schultes returned still again to the problem in 1967:

> It may likewise be of significance that, whether because of cultural differences or of floristic peculiarities or of some other as yet unappreciated reason, the New World is much richer in narcotic plants than the Old. These statistics, naturally, relate merely to those plants the narcotic properties of which man has discovered in his trial and error experimentation during the course of human history. The longer I consider this question, the more I am convinced that there may exist in the world flora an appreciable number of such plants not yet discovered by the experimentating natives and still to be found by the enquiring phytochemist[12].

The number of narcotics yet to be found may be fewer perhaps than we anticipate, however, if we are right in supposing that over long epochs hunting-and-gathering natives repeatedly explore flora randomly for food. Indeed, Schultes himself has repeatedly stated his respect for the ethnobotanic experience of primitive peoples. Though he is the ranking authority on New World narcotics, Schultes is not content either to explain the matter easily in terms of objective floristic peculiarities.

Of the perhaps 800,000 plant species, Schultes[13] points out that among the 200,000-500,000 Angiosperms only about 3,000 are known ever to have been used directly as human food; that of these, only about 150 are important enough to have entered world commerce; and that of these last only about 12-13, all of them cultivated, really stand between man and starvation. Small as this number is, the provenience of the major food plants is reasonably balanced between those of Old World and New World origin[14]. Thus, given the discrepancy in provenience of narcotics, Schultes, following the Americanist ethnographer La Barre[15], would accede to the proposition that there exists a "narcotic complex" of New World peoples.

The matter of narcotics may be seen in biochemical perspective with some objectivity, since.

> We find, likewise, that the number of species providing man with narcotic agents is very small. Between four and five thousand species are now known to be alkaloid (*apud* R. F. Raffauf), and we must realize that constituents other than alkaloids –glucosides, resins, essential oils, and others– may be responsible for narcotic activity. Probably no more than 60 species, including Cryptogams and Phanerogams, are

employed in primitive and advanced cultures for their intoxicating effects. Of these, only about 20 may be considered of major importance[16].

Only four or five narcotic cultigens are commercially important, and they are unknown in the wild state, indicating long association with man. Surely, there is no massive selective ecological difference between the Old World and the New to account for great discrepancies in plants producing alkaloids, glucosides, resins, and essential oils in every case! We are, therefore, again forced afield beyond the probabilities of "natural occurrence" in order to explain the discrepancy in narcotics between the Old World and the New.

More ethnologist than ethnobotanist, and certainly than botanist, I believe that the statistical discrepancy may perhaps be explained on two levels: (1) our *human* ignorance (i.e. that of primitive folk-botanists as well as that of scientific ethnobotanists) of the total facts of local and world distribution; and (2) the *relatively greater knowledge* by New World natives of psychotropic plants, which is based on identifiable "cultural differences as yet unappreciated". It would be difficult to maintain, despite Schultes' brilliant and protracted fieldwork and that of his distinguished predecessora, that New World plant species are *better known* botanically –the many new species he discovered would alone tend to discredit the supposition– than those of the long-researched Old World in general and hence *more narcotics are known* from the Americas. The critical point is that these were *already known to natives.* Furthermore, any "narcotic complex" would necessarily embrace North, Middle and South America alike ethnographically, and especially their contiguous meridional portions, say 40° N. Lat, to 20°S. Lat. – a region ethnographically, but hardly botanically significant.

Since, significantly, this *larger number* of narcotics were already known to the American Indians, is it possible that they were *culturally motivated* to seek out psychotropic plant substances, as implied in Schultes' shrewd surmise? I believe that this is demonstrably the case. To show this requires a brief summarizing excursus into pan-Americana paleo-Indian basic culture.

Though certain essentially Asiatic paleo-Siberians (e.g. the Akmak people)[17] early hunted in interior Alaska and on the tundra of "Beringia" at the height of the last glaciation 20-18,000 years ago –when so much water was tied up in glacial ice that the continents were connected by this 1,300-mile-wide, dry-land corridor –the rest of the New World was blocked to man by an all-Canadian glacier that began to gap only about 14,000 years ago. Most authorities now date the first massive invasion of proto-Indians to the late-Paleolithic "Big Game Hunters" of the interior North American Plains, whose culture can be traced through the "Magdalenian" of Lake Baikal sites in Siberia westward to the classic Magdalenian of western Eurasia*.

On the basis of culture traits universal or near-universal from Alaska to Patagonia (e.g. the bow, spear-thrower, dog), it is evident that the trickling southward of paleo-Siberian hunters continued on into the Mesolithic period (witness the sporadic and distantly scattered occurrence of Mesolithic-period pottery in the Americas), at which time, many authorities believe, the Sibero-American Eskimo blocked further incursions of Asiatic peoples and cultures. It need hardly be noted that this picture is fully confirmed *archeologically* e.g. Asiatic-American semi-subterranean houses from Siberia to Alaska and the American Southwest), *linguistically* (e.g. tone-languages such as Apache and Navaho have been linked through starred-form proto-Athapaskan and proto-Sinitic to the Tibeto-Chinese tone languages of Asia), *physical-anthropologically* (serologically, etc.), *culturally* (the conical tipi-wigwam extends from western Asia across Siberia to the central Algonkians of the Great Lakes, snow vehicles from Finland to Maine, the circumboreal "bear ceremonialism", the Tungus olonism[18] and Indian vision-quest complex, etc.), *folkloristically)* (the Eurastic-American lightning-eagle, the "magic flight" myth-motif, the Orpheus legend), and even ethnobotanically (the ritual use both in Siberia and among Great Lakes Algonkins of the same *Amanita muscaria.*

All the invaders from Siberia were simple hunters and gatherers. All American agriculture and domestication (save for the Mesolithic dog) were local developments wholly independent of Asia. No later animal domesticates and no cultivated plants were intercontinentally-shared in pre-Columbian times (the Chinese peanut and Oceanic "yam" to the contrary notwithstanding)**

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* Charred baby mammoth bones in California imply in date a Neanderthal phase of man in America that has never been found and few authorities believe in. Certainly the American Indian is only an unspecialized (e.g., lacking epicanthic fold) paleo-Mongoloid version of modern *Homo sapiens.*

** The more romantic "Kon-tiki" fantasy of Polynesian settlement from Peru is scientifically irresponsible and lacks the integrated and consistent evidence from all the anthropological sciences that the Sibero-American thesis does (the Polynesians were not Indian in race; their languages are Malayo-Polynesian; the Polynesians were great Oceanic voyagers, which Indians were not; Polynesian religion, political systems, mythology, and plant cultigens are wholly different from American Indian equivalents). That boat-loads of the great "Vikings of the Pacific" might have reached the conspicuously "barn-door" west coast of the Americas is a more probable hypothesis and one accepted by most Americanists to account for all the Pacific-American sporadic similarities (Nordenskiold); there are no "Indian" cultures pin-pointed from non-seagoing Americans into Pacific islands. The exclusively proximate-to-Asia presence of body-armor, and perhaps the distinctive Northwest Coast art –Asiatic similarities visible as late as the first Chinese Bronze-Age Shang dynasty have been convincingly argued– are late exceptions, but by the same Silvero-American route. The generic American culture-horizon consequently remains incontestably the Upper Paleolithic-Mesolithic from Siberia.

Basic religion in both Americas was the visionary shamanism of hunters, with animal familiars and animal "owners" quite like and in fact culture-historically continuous with paleo-Siberian shamanism and the shamanism of Mesolithic Eurasiatic hunting peoples*. As ecstatic-shamanists they valued the psychedelic state; as simple hunters and gatherers they were under pressure continuously to explore their plant environment for food –and accidental new narcotics.

The ethos of the American Indians was and essentially remained that of hunters. For one basic example, economic organization and social status everywhere –even to the *potlach* give-away feasts of the wealthy Northwest Coast fishermen, even to the economic give-and-take focused on the "great house" chiefs of Amazonia, and even to the stored tax-hoards of the royal Inca communal state– all were ultimately based on the invidious ability of hunters to provide shared largesse for their dependents**.

In this male-oriented hunting society, curiously, *quite like food,* a boy's manhood and manly prowess in hunting and war and sexuality *all came as gifts from the outside,* from the stronger ones, that is as "medicine power" from the outer generalized supernatural (Siouan *wakan,* Algonkian *manitou,* Iroquoian *orenda,* etc.), and not from any endogenous endocrine entelechy within[19]. At adolescence this power was *acquired,* or struck in like lightning, or imbibed by the individual whether in the individual vision quest, the shamanic spirit-possessed ecstasy, or in the invariably, therefore, *sacred* eating, drinking, snuffing, or smoking of psychotropic plants.

This power-concept is pervasive. Even in the advanced hierarchic agricultural societies of the Aztec of Mexico and the Chibcha of Colombia, with the vague generalized supernatural now become personalized gods (e.g. the Aztec god of war whom, before sacrifice, the bravest war-captive impersonated for a year), these gods still needed to be fed spirit-power like food from the human-sacrificial victims; the Aztec captured these victims in war, the Chibcha bought them in a lively trade with neighbors. Quite as Andeans brought tribute to the Inca, and as young Amazonian hunters perforce brought their game to the greathouse chief to distribute, so also in religion hierarchic Aztec and Chibcha brought human-spirit food to their gods. Farther north scalping, and farther south head-hunting had the same motive, the acquisition of spirit-power from scalp or skull, whether for the individual or for the tribe. *Mos saecula, mos religiosa:* men need "power" for success in all male activities, gods need power to remain gods.

It strikes us as strange that the shamanic "doctor" himself takes the "medicine" in the whole area of the American narcotic complex, rather than the sick patient. But this is entirely logical in native terms, since it is the shaman who needs the supernatural "power" to effect a cure, i.e. to diagnose the human or physical cause (often a crystal, a feather, a claw, etc., to be sucked out), to contest a rival's malevolent magic causing the illness, to prognosticate, for clairvoyance, to control the weather, and the like. Moreover, even more widely than in the narcotic-complex area, the shaman-visionary has power over the illness, manifestly because with supernatural power he himself has recovered from it. Likewise, any patient whom he cures characteristically joins the "medicine society" of the shaman, cure being much like initiation into a ritual secret one witnesses and learns, so that all members of the Bear Society, for example, share the "bear power" of the shaman. It is a psychic sodality much like Alcoholics Anonymous.

For the American Indian, the presence of any psychotropic effect in a plant was plain evidence of its containment of supernatural "medicine" or spirit-shaking "power". One introjected the power exactly as he ate food.

The principle was true of even so mildly psychotropic a drug as tobacco. Aboriginally tobacco was *always* used in a sacred magico-religious context, and never for mere secular-indulgent enjoyment. Thus when the post-adolescent Amazonian boy licked from his dipped spatula the tobacco infusion from the men's palaver-pot, the act signified and sealed his yea-vote (by convention all Indian votes are "unnanimous"), which he must hereafter religiously honor under the potent supernatural sanc-

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* Even the famed prestige-warfare of the Plains (which was certainly no Marxian class warfare struggles over the means of production, etc.) may have derived ultimately from the hunting ethos. When strictly individious prestige could no longer be based on hunting of animals as fantastically plentiful and easily accessible as the Plains buffalo, then the more difficult hunting of men preserved the invidious prestige basis of aboriginal American society.

** From the *Philosophes,* encyclopedists and other Eighteenth-century utopians down to the early Nineteenth-century Romantic Movement, the image of the American Indian (with obvious tendentiousness in then-contemporary Europe) has been that of open-handed communalist generosity. But this ethnographic truth neglects the obverse of the coin, the inveterate and deep-seated psychological *dependency* of the rest of the band on the great hunter and band chief –not all James Fenimore Cooper's Indians were the deer-slayers!– a dependency early transferred to the trader as source of goods, then to the Indian agent, and now on reservations to the Indian Office bureaucracy. The proud hunters and warriors without weapons are now, sadly, a rural proletariat of the psychologically (and culturally) most dependent kind. It is no accident that peyotism, based on the psychotropic *Lophophora,* has since 1890 diffused almost universally among the Plains tribes. It might even be argued that the notorious Indian vulnerability to alcohol is consistent with their inveterate quest for "medicine power" *from outside* and their deep cultural dependence on the psychedelic experience. Any attempt to "better" the plight of the Indian must realistically take into account, beyond romanticizing, the culturally built-in psychological dependency of the American Indian.

tion of the manifest "power" in the tobacco liquor. And when in the Woodlands or Plains, Indian chiefs in a grave intertribal pow-wow smoked the sacred calumet or peace pipe, the rite meant the invoking of the power of tobacco upon their sacred oath. An Iroquois visionary made the appropriate gift to a tobacco-begging supernatural he was lucky enough to encounter in the woods, whereupon he carved the face of the supernatural on a living basswood tree and possessed the supernatural's power when he wore the cut-off mask in any subsequent dance of the False Face Society. A Plains Indian peyotist censes himself in the smoke of the shavings the Cedar Chief casts into the fire; he rubs the sweet smell of *Artemesia* on his joints to preserve his body from aches and pains; but he is "praying" when he smokes a blackjack oakleaf –or a cornhusk– wrapped cigarette in a peyote meeting. The abundant evidence would suggest, in fact, that tobacco was *the* supernatural plant *par excellence* of the American Indian, for tobacco was aboriginally used everywhere that it would grow in the New World, that is from middle Canada southward to Patagonia.

In similar fashion, no Andean communicant would think of approaching the supernatural without being intoxicated with the chewed *Erythroxylon coca* leaf; more exactly, the psychotropic effect *is* the supernatural. In Mexico, even into historic times, alcoholic intoxication occurred in a sacred religious context[20] and the same was true in tribal fiestas from the non-Pueblo Southwest to the Andean plateau and Amazonia[21]. The Virginian "huskinawing" with the *Ilex* "black drink" was a puberty ritual magically making boys into men. *Datura* intoxication was part of a puberty ordeal or of shamanistic possession in southern California, and in any other use of daturas in South America a similar magico-religious context should be sought. The same should be done with respect to the *Virola* snuffs and *Anadenanthera peregrina.* Aboriginal Aztecan and modern Mazatecan use of the *teonanacatl* mushroom (literally, eating the "flesh of the god") has very ancient cognates in the paleo-Siberian use of *Amanita* fly-agaric in shamanled group-intoxications; the alleged "mushroom stones" of the Maya represent probably just that. The Red Bean *Sophora secundiflora* had supernatural power whether laced on a moccasin-fringe, hidden in a medicine bundle, or worn as a necklace, because it obviously had "medicine power" when eaten; it was also used in an aboriginal Red Bean cult spreading from prehistoric Texas (the evidence is archeological) to the southern Siouans[22]. And with all specific tribal cultures now largely gone, residual generic Plains culture still regards the hallucinations produced by eating peyote, *Lophophora williamsii,* as visionary proof of the presence of the supernatural[23]. Whether shaman alone, or shaman and communicants, or communicants alone imbibe or ingest the black drink, datura infusions, tobacco in whatever form, native beers and wines, peyote cactus, ololiuhqui seeds, mushrooms, narcotic mint leaves, or coca, ayahuasca *(Banisteriopsis caapi)* or "death vine" –or any of the vast array[24] of Amerindian psychotropics– the principle is the same. *These plants contain spirit power.*

Although the earlier Indian use of psychotropic drugs in shamanistic hunting societies is still thoroughly visible in the advanced Aztec use of many in their more codified rites to individuated gods, and to a degree also in the use of coca in similarly advanced agricultural-herding states of the Andes such as the Aymara[25] and the Inca, it has been repeatedly remarked by ethnologists that the intensively agricultural Pueblos, with their more tightly organized politico-religious theocracies, manifest almost a clear repugnance to alcohol and other psychotropic substances. Nearer geographically than Plains Indians to the natural area of *Lophophora williamsii,* Pueblos are yet not peyotists, even though they have been longer exposed to Mexican-Southwestern peyotism –save for Taos, most Plains-like of the Pueblos, with its centuries-long battle over peyotism. In the midst of Athapaskan and Yuman tribes with their typical ritual use of many native wines and beers, the Pueblos shun alcohol. They also lack *Sophora* cults and for the most part any use of datura; and though they border on Mexican tribes that use narcotic mushrooms, mints, ololiuhqui, etc., the Pueblos use none of these agents. Among Pueblo agriculturalists, erstwhile shamans have become primarily rain-priests, emphasizing almost exclusively the old ability of shamans to control the weather. Religions change ecologically too.

Is it possible that agriculturalists have different anxieties from those of hunters? Is a "technology" of rain-making more needed than animal helpers in hunting? Does religion itself become more bureaucratized with denser town-living? And do religions of town-living people become more routinized than those of individualistic hunters, naively content to rely on similarly-individualistic religion, i e. the direct mystical experience?

These are large questions. But some of these trends may be discerned in our own cultural tradition. Behind the Olympian king of the gods himself (an image significantly consistent with the *tyrannos* of the early Greek city-state) lurks the old Indo-European, indeed ancient Eurasiatic, shaman. Northern Zeus, who in Greece married local Hera of the "clear sky", still remained the weather-shaman and rain-king. The father of gods and men was still a fertility-figure, like the masked sorcerer of the Trois Freres cave and the central shaman in the Paleolithic wall-painting of the Cogul Dance. Zeus could still, like the shaman, metamorphose into many Ovidian animals. In fact, he and his brother Poseidon still held the sacred trident symbolic of the old Eurasian shaman. Many a Greek god retained as "attribute" his original shamanic animal-familiar (Apollo's wolf, Artemis' stag, Athena's owl and snake, Zeus' thunderbird and so on). Behind the ubiquitous rain-bull of Neolithic agriculturalists in Asia Minor and Egypt, too, was

the mighty wild aurochs of late Paleolithic hunters. In this region also were many an ancient "Mistress of the Animals" as old in prototype perhaps as the Magdalenian mother-goddesses. And even the two gods most characteristically Greek of all still had their ecstatic shamanistic oracles, Zeus at Olympus and Apollo at Delphi, some say intoxicated with laurel leaves. Indeed, the Hellenistic Mysteries and even later cults drank immortality with the blood of the vine-god and ate it in the flesh of the divine animal or the seed-cake of Ceres (which Wasson has conjectured contained an LSD-like hallucinogen from grain smut)[26].

The possession of ritual psychotropics is surprisingly tenacious culturally. It has been plausibly argued that the Indo-European gods were "divine" in directly shamanistic terms: they drank alcoholic mead from fermented honey-water nectar (that may be as old as Mesolithic art showing honey-gatherers, though the pan-Indo-European term for *mead* is only as old as the Chalcolithic or Bronze Ages); and they ate odorous ambrosia (*Amanita muscaria,* the narcotic mushroom of paleo-Asiatic shamanism). The shamanism of ancient hunters seems never to have been lost, only transformed (into the wine-blood and Host-wafer flesh of the god). And perhaps the Greek nature-gods are so naively man-like simply because they were once merely the shamanic nature-mages and rain-kings.

What is the tenor of these speculations? Briefly: hunters have supernaturals appropriate to their needs and shaped projectively by their socio-economic ecology and secular anxieties about finding game. These figures are not lost with the "Neolithic Revolution" of agriculture and husbandry, but are only masked and changed into socio-politically more relevant gods. The personal magic of ecstatic shamans, borrowing supernatural forces directly from nature, evolves into religious worship and placation of cosmic gods in whom the power now permanently resides. (And when the anthropomorphic God dies, we are left the impersonal forces of science).

American Indians, in ethos essentially still hunters (with late local high cultures in Mexico, Chibchan Colombia, and Andes still preserving shamanistic traits) and still kept in religion also the fundamental shamanism of hunters. American Indians still actively sought the mystic visionary experience; their epistemological touchstone for reality was direct psychic experience of the forces in nature, not a sophisticated critique that seeks to rid experience of subjective elements; and they still sought, under this religio-cultural inspiration, the actively psychotropic drugs to attain this state. Their cognitive map was that of the mystic perhaps, but it as also pharmacodynamically pragmatic: *some plants house spirit-powers and psychedelic forces.*

American Indians of the ethnographic present still have the knowledge of psychotropic plant substances consistent with the characteristics shamanism of hunting societies. The Old World may once have known more such plants, but with socio-cultural changes these have now faded into desuetude and myth. (What did the Lotus - Eater ingest? and why was the lotus sacred both in Buddhist India and in Egypt? What was the Odyssean *moly?* What were Circe's drugs?) Meanwhile the Old World in objective botanical fact may contain as many psychotropic plants as by chance we would expect them to have from our knowledge of the vivid and still discernible "narcotic complex" of the New. The ethnobotanist and the paleo-ethnologist need only learn over again what earlier men once knew.

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