

Mushroom Sacraments in the Cults of Early Europe

by

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Abstract

In 1957, R. Gordon Wasson, a professional banker and amateur mycologist, inadvertently launched a profound cultural change that has come to be called the Psychedelic Revolution, by publishing an account of his experience with a Mazatec shaman in Hautla de Jiménez in the mountains of central Mexico. The article appeared in *Life* magazine and was intended as publicity for his forthcoming *Russia, Mushrooms, and History*, in which he and his Russian-born wife Valentina Pavlovna pursued their lifelong fascination with their dichotomous attitudes toward fungi, which had led them to suspect a cultural taboo upon a sacred object. In 1968 he traced this taboo back to the Vedic Soma, which he identified as a psychoactive mushroom. The identification, if correct, implied that there should be evidence for a similar sacred role for the mushroom in other regions in antiquity where the migrating Indo-European people settled. In 1978, he proposed such a role for the visionary potion that was central to the mystical experience of the Greek Eleusinian Mystery, that was celebrated annually for two millennia at a sanctuary near Athens. The possibility that the ancient Greeks indulged in chemically altered consciousness is antithetical to Europe's idealization of Classical antiquity and the proposal was largely ignored. Mushrooms, however, were fundamental to social norms and religious observances in the celebration of Dionysus, and figured in other Mystery cults and in the foundational traditions of many cities, including Mycenae and Rome. The Soma sacrament as the Persian haoma was proselytized to the West by the Zoroastrian priests of Mithras and became a major cohesive indoctrination for the Emperors, army, and bureaucrats who administered the Roman Empire. It survived the Conversion to Christianity in the knightships of late antiquity and the medieval world, and was assimilated to the Eucharist of certain of the ecclesiastical elite.

Key Words: mushroom, ergot, Dionysus, Apollo, Mithraism, Renaissance art, prehistoric rock art.

Marital Crisis

In *Mushrooms, Russia and History* (Wasson and Wasson, 1957), R. Gordon Wasson and his Russian-born wife Valentina Pavlovna pursued their fascination with fungi, dating back to 1927, when upon their delayed honeymoon they first became aware of their dichotomous attitudes to something so simple and fundamental as mushrooms. The subject had never arisen in their five years of courtship. In a walk through the forested Catskills before supper at a friend's loaned mountain chalet, she discovered that the path was strewn with lovely mushrooms that he considered all loathsome toadstools. As a marital avocation while they each engaged in their separate careers, hers in medicine and his as an investment banker, they began collecting occurrences of mushrooms in European folklore, literature and art, which culminated in the deluxe two-volume compilation published just shortly before her death.

They had come to suspect that the difference, which they termed mycophobia and mycophilia, betrayed some religious taboo upon a sacred substance, traceable back to the earliest prehistory and somewhat mysteriously still surviving into modern times, perhaps as some kind of archetypal folk memory. The mushroom's sanctity is reflected in the absence of a name for something too sacred to name (Ruck, 2010). The natural growth, which can be classified as neither plant nor animal, is designated by metaphors or distanced as foreign words imported into the language. Among the mycophilic Slavs, there are more than forty designations, while the mycophobic Anglo-Saxons have only four, the foreign imports, fungus from Latin as metaphorically a 'sponge' and champignon from the French as a product of the 'field.' Mushroom is similarly an import from Late Latin through the intermediary of French *mousseron*. It, too, is ultimately a metaphor, derived from the verb *mussare*, which is onomatopoeic for making the sound of mooing or bellowing cattle, and hence a bovine zoomorphism of the mushroom (Ruck, 2015a). The only truly Anglo-Saxon name is the toadstool, describing it as a folkloric chair upon which is seated a loathsome toad, secreting the psychoactive toxin bufotenine, which it shares with certain fungi.

The intermediary status of the mushroom's classification, moreover, is reflected in its abundant occurrences in folkloric tradition, where it functions as the ultimate mediator between oppositional forces and concepts (Toporov, 1985). This dichotomy inevitably suggests the divide between the realms of life and death, and the

mushroom lends itself readily to zoomorphism and anthropomorphic materializations as guides or modes of transport across the intervening frontier.

Psychedelic Revolution

This suspicion of the mushroom's primordial sanctity had led the Wassons in 1953 to the south-eastern Mexican village of Huatla de Jiménez in the mountains of Oaxaca, where they were introduced to the diviner Aurelio Carreras and his mother-in-law María Sabina. Gordon and Valentina participated as outsiders in a mushroom ceremony, an evening rite or *velada*, that had been kept as a carefully guarded secret of the indigenous people. The Wassons included an account of the events in *Mushrooms, Russia, and History*, but intentionally buried in the text, where it generally escaped notice and elicited little attention. Gordon innately abhorred sensationalizing his discoveries. In 1956, he read a short carefully worded paper before an association of Classical scholars in Philadelphia describing his experiences in Mexico, but in the ensuing discussion he intimated that the mushroom cult might shed light upon the Greek Mystery religion of Eleusis and the name of the city of Mycenae. One of the metaphors for the mushroom in Greek is *mykes*, as slimy and 'mucous.' Shortly later he received a letter from a friend of some thirty-five years advising him to keep his focus on Mexico and avoid implicating Classical antiquity. Nevertheless, there is a mythical account that a Greek hero Perseus plucked a mushroom at the site of the ancient city, and the monster Gorgon Medusa, whose head he similarly harvested as a golden apple with a pruning hook, was recognized in antiquity, in hermetic funerary contexts, as a mushroom (Ruck, 1978).

The pursuit of this same intriguing suspicion of a mushroom cult in Europe had already brought Wasson and his wife in 1952 to the Plaincouralt chapel in central France, where a Romanesque fresco of the Temptation episode in the biblical Garden of Eden had been suggested as early as 1911 as depicting the Tree of Knowledge in the guise of a psychoactive mushroom (Marchand *et al.*, 1911). They were advised, however, by a noted art historian that the resemblance was purely fortuitous and that medieval artists customarily painted trees in the stylized likeness of mushrooms. If they had looked across the Chapel at the opposing wall by the entrance, however, they would have noticed a mysterious scene that is not without relevance to the interpretation of the Tree of Knowledge. Another mushroom hovers in the air, in the guise of a red blacksmith's hammer, labeled by an inscription in dialectal Old French as the key of heaven. The fresco depicts the miracle of Eligius, the Chapel's namesake and patron saint. The mushroom is identified as the miraculous steed that has brought the Lord to the blacksmith's smithy to shoe His horse's single foot. Eligius is named as the patron of the 'Elect,' those privileged to see the Lord (Ruck *et al.*, 2007). The horse as the miraculous entheogenic transport occurs also in the birth of the flying Pegasus from the severed neck of the plucked Medusa's head. Wherever Pegasus touched down, a magical spring of inspiring waters burst forth, for which reason he is named as the 'Fountain Horse.'

Partly as publicity for the forthcoming publication of *Mushrooms, Russia, and History*, Wasson made public an account in the now legendary 13 May 1957 issue of *Life* magazine of his mushroom-induced visionary experience in 1955 with the Mazatec shamanic healer María Sabina, whose identity he attempted to mask under the pseudonym of Eva Mendez, thereby divulging and greatly popularizing the secret and inadvertently launching a flood of tourism to the remote mountain village and the ensuing cultural phenomenon that has come to be termed the Psychedelic Revolution. Albert Hofmann had discovered LSD in 1943, but it went without public notice until Wasson's magazine article, and within ten years *Life* published another article about LSD as a therapeutic drug that had gotten out of control. The patrician Wasson was a most unlikely person to play such a role and he distanced himself from the notoriety of the several leaders who rose to prominence in the resulting turmoil of recreational drug abuse, countercultural politics, and religious innovation.

Soma

Gordon retired from banking in 1963 and in the afternoon of his last day at work, he boarded a friend's merchant ship that sailed to the Far East, pursuant to the same theory of the mushroom's sanctity in the Old World that he and his wife had found among the indigenous peoples of Mexico. Two years later, he returned from the Orient and settled in Danbury, Connecticut, to work on the evidence he had gathered, resulting in the

publication in 1968 of *Soma: Divine Mushroom of Immortality*, written with the aid of the young Indologist and Vedic scholar Wendy Doniger O'Flaherty, who now holds the Mircea Eliade professorial chair at the University of Chicago (Wasson, 1968). Wasson had heard of the reportedly intoxicating Soma as a teenager from his father, an Episcopalian clergyman, who wrote a book on God and alcohol and brewed spirits in his basement during the era of Prohibition.

Soma is an unidentified deified but not personified plant in the Vedic Sanskrit texts, carefully preserved as an oral tradition dating back as early as the mid second millennium BCE and committed to writing only after the rise of Buddhism, the earliest in the first century BCE, but mostly toward the end of the first millennium CE. The same sacred plant was known to the ancient Persians as *haoma* (sometimes deified), a dialectal version of the same name, described in the sacred texts of Zoroastrianism called the *Avesta*, which is so titled since they are the sole surviving examples of the Avestan language, a liturgical Old Iranian tongue closely resembling Vedic Sanskrit. The surviving texts were similarly transmitted by oral tradition dating back probably to the mid second millennium BCE, but finally committed to writing in the third century CE in the Sassanian era, which replaced the Parthian Empire and continued as the ruling dynasty until its overthrow by the Muslims in the mid seventh century.

Since Zoroaster is not so much a personal name as a profession meaning 'astrologer,' it is difficult to date the first occurrence of the priest who held the title, and some would place him a millennium later. The first Zoroaster (Zarathustra) is probably a figure of mythologized history. He revised the Hindu polytheism, elevating the solar deity Ahura Mazda ('Illumination Wisdom') to sole monotheistic primacy, with the heroic Mithras as mediator with the human realm. Many elements of the Mithras story coincide with the Greek hero Perseus of Mycenae (Ruck *et al.*, 2011). Since the Zoroastrian priests or Magi proselytized their faith, their concept of monotheism may be the original source of the ensuing monotheistic religions, including the mid second millennium heresy of the Egyptian pharaoh Akhenaten.

Wasson proposed that the primordial botanical identity of this Soma/*haoma* plant was a mushroom, in particular the psychoactive *Amanita muscaria*, commonly called the fly agaric for its apparent ability to attract and kill flies. The physical characteristics of the divine plant as transmitted in the formulaic oral tradition are difficult to interpret since some may be metaphoric and others are open to a variety of linguistic interpretations, but remarkable for a plant, there seem to be no indications of a flower, leaves, or roots, attributes unique to a mushroom. The Soma ceremony was specifically intended to induce a state of intoxicated ecstasy that produced spiritual health, renewal, and immortality through mystical communion with deity (Spess, 2000), and was an entheogen. The theory had a controversial reception, with some proposing other candidates, most commonly cannabis, opium, and ephedra (Syrian rue) (Flattery *et al.*, 1989). Residues of all three have been detected in archaeological remains of temples where the *haoma* ceremony was performed in sites as early as the mid second millennium BCE, as well as indications that the rite may have involved animal masks in the ritual, implying initiatory experiences of zoomorphic transmogrification (Bennett, 2007; Sarianidi, 2007). The cannabis was apparently used to fumigate the chambers. It is probably ephedra that is depicted in ancient portrayals of the Magi priests carrying the barsom bundle of twigs, and it still is used along with pomegranate in living Zoroastrian practice among the Parsis today, where the ancient *haoma* is called *hom*. There is also a tradition in contemporary practice that the ritual is purely symbolic, with only commemorative token sub-threshold amounts of the entheogen administered. It appears to be a customary tendency for religions to revise their history in denying the ecstatic nature of the original rites (Ruck *et al.*, 2013), which in all probability have continued unabated, restricted for certain groups of the elite, or survive among marginalized and isolated adherents of the religion.

Syrian rue (*Peganum harmala*) is a bright green, dense, twiggy herbaceous succulent with conspicuous white flowers that grows in arid desert conditions. It has established itself as an invasive foreign import in the American Southwest. It acts as a monoamine oxidase inhibitor (MAOI) and hence can function in the preparation of brews like *ayahuasca* to prevent digestive destruction, but evidence of its psychoactive properties in isolation is sparse and debatable. It is the source of the dye called Turkish red, employed in carpet weavings.

Wasson argued that although a variety of surrogate substitutes were employed as the tribal migrations moved into new areas that did not present a suitable habitat, the fungus best matched the characteristics as fossilized in the transmitted oral tradition, including its transfer and persistence into the excreted urine in a more potent

potentiated form. This latter characteristic can be interpreted as culturally pejorative, but it is documented in Siberian shamanism which employs the *Amanita muscaria*. There is also a tradition of therapeutic urine drinking in Ayurvedic medicine. Wasson would later discover the use of the fly agaric and its urinous metabolite among certain indigenous people of the New World, as disclosed to him by Keewaydinoquay, a shaman of the Anishinaabeg (Ojibwe) of the region around the Great Lakes (Keewaydinoquay, 1984).

Mushroom Surrogates

In 1975, the art historian Stella Kramrisch, a specialist in Indian art and Hinduism, who held the professorship of South Asian Art at the University of Pennsylvania and was a curator at the Pennsylvanian Museum of Art, demonstrated that one of the first surrogates for Soma was a mushroom, not a psychoactive variety, but chosen for its symbolism as a mediator between death and spiritual transcendence (Kramrisch, 1975). Its corpse-like putrid stench was transmuted into fragrance in the firing of a ritual clay vessel, which represented the decapitated head of the deity Makha, analogous to the fungal materialization of the Greek Gorgon. One of the earliest depictions of the Gorgons occurs on a colossal seventh-century *píthos* urn that once served as a grave monument along the sacred road to the Mystery sanctuary of Eleusis. It depicts them with pots for heads, suggesting that the pot-headed females were anthropomorphisms of the potion that was the original content of the vessel.

In 1982, Wasson similarly discussed a non-psychoactive mushroom that appears to have been a surrogate for the original Soma. Gautama, the first Buddha (sixth to fourth century BCE), did not die, but by his own volition, it was claimed, since he had achieved such complete control over his physical body, he simply ceased living, the Great Demise, as it is called (Wasson *et al.*, 1982). As he was traveling with his entourage of monks to the place that he had chosen for this termination, he was offered hospitality by a blacksmith, who served them a meal of mushrooms. The role of a blacksmith as culinary host is an unlikely detail, except as mythologized history, and probably implicates the motif of the alchemical smithy (Ruck, 2015a). Brahmans can eat no mushrooms since they grow from unclean matter, but since all plants have a similar manner of growth, the prohibition betrays a probable taboo upon a sacred substance. Gautama decided, at this critical moment of his life, that he alone could break the prohibition and accepted this last meal, that he denied his entourage.

Eleusinian Mystery

After the publication of *Soma: Divine Mushroom of Immortality*, and before the appearance of such confirmatory evidence, it was argued that if the Soma/*haoma* sacrament was indeed fungal, there should be indications of a similar sanctity of the mushroom in other regions that the IndoEuropeans occupied in their migrations, beginning at the start of the second millennium BCE, away from the central Asiatic highlands that was considered their ancestral homeland, mythologized in Greek tradition as the Hyperborean country of the people who lived in a Apollonian paradise beyond the North Wind. Wasson returned to his intimation about the Greek Eleusinian Mystery and enlisted a team that included the Swiss chemist Albert Hofmann. In 1978, they published *The Road to Eleusis: Unveiling the Secret of the Mysteries* (Wasson *et al.*, 1978). It has been republished three times in commemorative successive decades. Mystery religions in antiquity involved something that the initiates were bound to keep secret. Plato describes the experience as a face-to-face visionary encounter with deity. The Judaic NeoPlatonist Saint Paul of Tarsus employed the same metaphor in describing what he called the Christian Mystery (Ruck, 2014). At Eleusis, this happened annually, predictably on schedule simultaneously for groups of several thousand candidates on a single night after the drinking of a special potion, whose ingredients were well known: kernels of barley and a common insecticide called fleabane, 'stirred' or mixed in an aqueous solution, for which reason it was termed the *kykeón* ('stirred with a circular motion,' cognate with 'cycle'). The simultaneous access to face-to-face mystical vision for thousands on a single night annually for over a millennium would be difficult to interpret as anything but an experience of shamanic communion with divinity induced by a psychoactive agent, and in this case the precise formula is an element in the recorded tradition.

The fleabane would seem the most obvious candidate for a toxic substance, and it had been proposed already as early as the nineteenth century. It, however, is not visionary, nor is its toxicity accessible in the miniscule concentration in the *kykeón*. Its role is symbolic, representing a wild plant, in contrast to the hulled barley

groats, which are the products of cultivation. The fleabane, moreover, was personified as the water nymph Minthe, fragrant with the scent of mint (for which she is named), in which persona she was the perfumed whore of the netherworld lord Hades, abducted without the sanctity of marriage and hence the enemy of the matrimonial rite and civilized patriarchal culture. In Greek cultural tradition, the transition from matriarchal dominance to patriarchal revisionism marked the transition to Classical antiquity and the reign of the twelve Olympian deities, headed by the father god Zeus. Emblematic of that transition was the imposition of monogamous matrimonial control of the husband over his wife. The goddess Demeter vented her anger on this minty whore by grinding her with a mortar and pestle into a residue of despicable fragrance. In botanical nomenclature, fleabane is *Mentha pulegium*, where the specific name is an adjectival form of *pulex*, the Latin for 'flea.' In English it is commonly called 'pennyroyal,' where 'penny' is a corruption of *pulegium*. The honorific description of it as 'royal' (from the Old French *pouliol royale*) probably derives from its association with the Mystery.

In the year 415 BCE, it was discovered that numerous prominent citizens of Athens had been profaning the Eleusinian rite in their private homes by using the *kykeón* as a recreational drug with friends at their drinking parties. As parodied on the comic stage at the time, it was precisely evidence of the profane drinking of the potion that implicated the culprits. The accused were brought to trial and executed or else fled into exile, with the resultant confiscation of their properties for sale at public auction. The death penalty seems to have pertained only to divulging the secret of the Eleusinian Mystery, and specifically for profane use of the *kykeón*. The ancient Greeks had access to many intoxicating herbs and substances to flavor and fortify their wines, as was customary, and fleabane certainly was not worth the formidable hazards of breaking the prohibition against the sacred drink. Socrates was parodied on the comic stage at the time in Aristophanes' *Birds*, as profaning the Mystery in a rite of necromancy, in which he summons a troupe of fantastic anthropomorphisms that are easily identifiable as mushrooms. The most obvious is the tribe of Shade-foot creatures, who have but a single foot, with which they hop vigorously about until they tire, whereupon they fall upon their backs and slumber under the shade cast by the broad uplifted single foot that resembles a parasol (Ruck, 1981). Another of these anthropomorphisms was the Tongue-in-bellies, with a bulbous head that comprised their entire body, supported on their conjoined legs like a single support. They, too, not only are easily recognizable as fungal creatures, but in this configuration they blasphemously resemble the hermaphroditic dwarf who first served the specified *kykeón* potion as the etiology for its role in the Mystery initiation.

Ergot Mushrooms

The Wasson team demonstrated that the psychoactive agent in the *kykeón* was derived from the complex of numerous toxins present in ergot (*Claviceps purpurea*), a fungus that is parasitic on grain. Hofmann proposed that the active chemical was ergonovine, which is the only one that is water soluble and thus easily separable from the other toxins, some of which are potentially lethal and responsible for ergotism, causing gangrenous dermal lesions, hallucinations, and convulsive muscular twitching. Ergonovine, however, is only slightly visionary, if at all. Nevertheless, ergot often figured in medieval potions and the common nucleus of the ergot alkaloids is lysergic acid. In 2000, Peter Webster and Daniel Perrine revised the theory, identifying the active agent as ergotamine, a vascular dilator commonly prescribed in sub-threshold amounts combined with caffeine for the treatment of migraine (Webster, Perrine, and Ruck, 2000. Ruck, 2006). Ergotamine by partial hydrolysis (i.e., combining with water, but not a dissolution) in an alkaline aqueous solution yields ergine (LSA, lysergic acid amide), which is the same substance known as the visionary *ololihqui*, extracted from the seeds of certain morning glories in the shamanism of the Maya and Aztecs of ancient Mexico. LSD does not occur in nature, but LSA resembles it and is a natural substance.

The mycelia (root-like growth) of the ergot invade the parasitized grain kernels, causing enlarged purplish red sclerotia (hard bodies), protruding from the sheaf like cock's spurs, for which it is named (from the French *argot*). All mushrooms have a similar mode of growth, with the mycelia permeating large areas of ground, sometimes, as is the case with the *Amanitas*, living in mycorrhizal symbiosis with the roots of certain trees. The mycelium of the sclerotium, when the ergot falls to the ground and absorbs moisture, enters its fruiting stage, yielding tiny mushrooms visible to the naked eye, thereby identifying the ergot-infested kernel as apparently the seed of the otherwise seedless mushroom. Mushrooms propagate by microscopic spores, which were not detected in antiquity. Hence ergot mediates between the totally wild mushroom and the cultivated grain.

Primitive Grasses

The alkaline aqueous solution would have been produced by the addition of wood or bone ash to the water. This, also, represents a mediation, since the ashes constitute the residue from burnt offerings, the remains of sacrifice. The intrusion of the phallic plowshare into the symbolic vulva that is the furrow of the plowed field, converting it from the natural wilderness to cultivated arable land, is a sexual affront upon the sanctity of Earth, which must be appeased by a compensatory offering. In mythical tradition, the first plowman was sacrificed in the field he plowed, and the rite was repeated symbolically at each annual first insertion of the plowshare in a special field allocated for the inaugural plowing (Ruck, 2015a).

The sheaves of cultivated barley represent the cultivated antithesis of wild inedible grasses. Such edible grains were hybridized from more primitive grains. The most primitive is spelt (*Triticum spelta*), so named because it fruits with spikelets consisting of only two 'split' red grain kernels. These spikes obviously resemble the ergots of *Claviceps purpurea*. Hybridizing, moreover, is an ongoing process. Without continual human intervention, the hybridized grain would regress to its more primitive grassy manifestations. This is clear, for example, in the hybridizing of Indian corn by the indigenous peoples of the New World. If the cob falls to the ground, the next shoots that sprout from the entire ear will crowd each other out, so that their stalks grow progressively weaker and shorter, reverting to primitivism.

Weeds similarly infringe upon the healthy growth of the cultivated grains. A common weed in fields of grain is darnel or tares (*Lolium temulentum*). Its botanic nomenclature defines its species as 'drunken,' although it contains in itself no intoxicating chemical. Its reputation in antiquity as an intoxicant that induces altered eyesight derives solely from its common tendency to host the parasitic ergot, to which it is particularly susceptible. Darnel produced a cheap bread of proverbially poor quality, responsible for hallucinations. It threatened the cultivated crop, not only by competing for space, but also by contamination from its parasitic fungus. The ergot was called rust (Greek *erysibe*, Latin *robiga*) in antiquity, by which metaphor it not only designated its red color, but also likened it to the metallic oxidizing corruption that causes the iron tool to revert to the natural ore. It is hence emblematic of cultural recidivism.

The grain goddess Demeter/Ceres bore the epithet of *Erysibe* and wore slippers of reddish purple. In folkloric tradition, the ergot is metaphorically a pack of grain wolves, led by the grain Mother, rustling through the sheaves of fruiting grain, leaving the protruding infested kernels as 'wolf teeth,' that are also the iron teats of the goddess, who seduces children to come and nurse, rendering them maddened. A red dog was the annual victim of choice in Roman times to ward off the threatened infestation of ergot. The redness of the dog not only matched the color of the rust, but also associated it with the fox, which was interchangeable as a canine with the wolf, and hence the red dog represented also the primitive ancestors of the domesticated canine. There is also a mythical tradition that the rust scraped from a sacrificial knife was the antidote for the sexual impotency of a boy who had feared that he was the designated human victim.

The First Plowman

The potion of the Mystery initiation thus combined the wild and toxic fleabane, with its connotations of primitive sexuality, and the grain of the cultivated field. The connotations of the latter represent the grain goddess Demeter, who in the etiological myth for the Mystery is reconciled to the marriage of her daughter Persephone to her former abductor, Hades, the lord of the netherworld. The seed of grain must similarly be entrusted to the earth, in order to be risen. The mother relinquishes her daughter to the household of her husband, and the lord of the realm of death becomes related as an in-law to the celestial realm of the mother and her fellow Olympians. At the moment of the vision in the Mystery, the candidates, who had journeyed in the spirit to the netherworld, resurfaced in the initiation chamber at the moment that Persephone ratified her marital union to the otherworld by giving birth to the Mystery child, who was ultimately the first plowman. In mythical tradition, the celestial daughter had taken a seed of pomegranate into her body as she exited the netherworld, thereby contaminating her ethereal nature with physical matter, rendering her a creature that belonged to both realms. The pomegranate was named for its seedy bloody red matrix as the fruit of the menstrual 'flux.' Ergot figured in the pharmaceuticals of ancient midwifery both to stimulate uterine contraction and to control postpartum bleeding.

The ergot as the cultivated fungus was the multifaceted mediating agent in the potion. The efficacy of fleabane as an insecticide probably commemorates the similar toxicity of the fly agaric or 'kill-fly' (fly-bane, French *tue-mouche*). All noxious insects, moreover, lend themselves to identification with malevolent spirits. There were two stages to the Mystery, however, for which reason the rite is usually designated by the plural. The Mystery, like all the Panhellenic sanctuaries, underwent a patriarchal revision in the seventh century, reinterpreting rites of the Bronze Age, dating back to the mid second millennium, and probably even earlier. The Lesser Mystery commemorated not this patriarchal revision and the consummation of the marriage in the birth of the child, but the unsanctioned abduction, which in the mythical tradition was occasioned by the picking of a wild plant called the *nárkissos*, so named for the narcosis that it induced. This rite was enacted six months earlier and involved not the mediating ergot fungus, but its primordial identification as the wild mushroom. The sole participant for the Lesser Mystery was the noble woman who bore the titular role of Queen of Athens, attended by her female sisterhood of assistants, who prepared her in a secret ceremony for her sexual engagement with the deity in the guise of the bellowing mushroom in a sacred chamber called the bull stall, opened just once a year for this ceremony. The role for the so-called Queen dates back to the traditions that predate the patriarchal revision of Greek culture occasioned by the advent of the deities in their restructured personae as members of the twelve Olympians.

Reception

The reception of *The Road to Eleusis* was generally unenthusiastic, with one eminent scholar entertaining the theory, probably merely as a courtesy to the Swiss Hofmann, but misunderstanding it and concluding that by all reports ergot poisoning was an unpleasant experience (Burkert, 1987). A recent book on the Bronze Age archaeology of the Eleusinian sanctuary (2015), in the obligatory initial overview of the religion, employs the word entheogen (which implies the acceptance of the concept that a psychoactive substance is animate with deity), but considers the argument speculative and concludes that the best explanation of the *kykeón* is that it offered a fortifying refreshment to end the daylong preliminary fast of the candidates, who had walked the exhausting twelve miles across a mountain pass along the Sacred Road from Athens (Cosmopoulos, 2015). A couple of groats of uncooked barley stirred in an aqueous medium with an insecticide is an unlikely nutritional boost. As recently as 2013, an article on ritual vision at Eleusis that promises a summary of 'learned reconstructions' of what it calls 'scopic regimes' includes no mention of entheogens or *The Road to Eleusis* (Petridou, 2013). A new textbook of Classical Mythology, makes no mention of the *kykeón* in its summary list of the different possibilities proposed for the Eleusinian Mystery over the centuries, and although it claims to place the ancient myths in the context of cross-cultural traditions and contemporary debate, it censors the subject of drugs and dismisses Mithras in half a sentence as something popular in the second and third centuries CE (Maurizio, 2016). Classical scholarship is resistant to the notion that drugs played a role in ancient society. Similarly, an exposé of drug expertise in Classical culture has caused its author to be shunned in the profession (Hillman, 2008).

Wine and Mushrooms

The mushroom, however, is not confined to the Eleusinian rite in Classical antiquity. It is fundamental to the symbolism and rituals of the god Dionysus, the deity of wine, drama, and the ecstatic communion with divinity. The ritual emblem for the mountain revels was the thyrsus, the hollow stalk or peduncle of a giant reed, stuffed with ivy leaves. Magical plants must be gathered with rituals that address their indwelling potencies as entheogens (Geniusz, 2009). This often involves fantasies of sexual engagement and birthing. The thyrsus is the receptacle for the gathered plants. Thus it was interchangeable with the narthex as a term. This latter lends it name to the giant fennel (*Ferula communis*) or narthex. The Latin botanical nomenclature classifies it as a 'rod,' and the Greek narthex has the obvious etymology as the 'narcotic container.' Several ancient compendia of medicinal herbs were titled *Narthex*. When Perseus plucked the Gorgon head at Mycenae, he placed it in a *kibisis*. This container has a similar significance. In ancient depictions, it is seen as a wide open-mouthed sack slung upon the arm. It is the bag, as still used today, for harvesting apples and other fruits, allowing the harvester to catch the fruits picked or pruned from the tree with the other hand (Ruck, 2015b). Because of its mycorrhizal symbiosis with the subterranean roots of its host tree, the *Amanita* mushroom was seen as a fruit of its tree, equally with the magical golden apples fruiting on its uplifted branches.

As with the wild growths that yielded to cultivation in the planting of barley and other grains, the grapevine had primitive antecedents. Most emblematic of these was the ivy, whose leaves and diminutive berries were intoxicating in their natural state, whereas the leaves and fruits of the grapevine are edible. Upon the crushed grapes, however, can be grown wine as a civilized intoxicant. The ivy leaves stuffed into the thyrsus represent the natural toxins that predate the evolution of viticulture. The other plants cited for the mountain revels had a similar symbolism. Among these are smilax (bindweed or wild morning glory) and bryony (wild cucumber). Like ivy, both physically resemble the grapevine and its clustered fruits, but they are toxic in their natural state. European folkloric tradition (Grimm, *Muttergottesgläschen*) identifies the morning glory as intoxicating, perhaps analogous to the *ololiuhqui* of the New World (Ruck, 2014). Sometimes the ivy atop the thyrsus/narthex is replaced with a pinecone. In this configuration, the rod symbolizes the ecstatic experience accessed by the gathered magical plants or entheogens. The pineal gland is so named for its resemblance to the pinecone and was identified in antiquity as the gateway of the soul for transcendence.

The grapevine, moreover, is obviously a cultivated vine since it requires annual pruning to fruit. In this regard, it is analogous to the olive, which is the plant most emblematic of civilization as evolved from chaotic primitivism. Hence, the olive branch is symbolic of peace, and a wreath of olive and an amphora of its oil were awarded to victorious athletes. Mythical tradition identified the olive tree as the transmutation of a mushroom transported from the Hyperborean homeland in central Asia, and it was commemorated as such in the annual secret botanical offering supposedly sent from there to the sanctuary of Apollo on the island of Delos (Ruck, 1983).

The fermentation process was correctly recognized as a fungal growth. Mushrooms themselves were called a 'fermentation of the earth.' Significantly in ordinary culinary nomenclature persisting as late as the fourth century CE, the stipe of the mushroom was called its thyrsus, with the cap representing the psychoactive plants stuffed into its stalk. In the case of the *Amanita* mushrooms, the toxins are largely present in the cap. Prominent in the metaphoric accounts of the mountain revels is the encounter with the mooing and bellowing bovine zoomorphic manifestations of the mushroom. A fragment of a fifth-century tragedy about the hero Perseus describes the ground bellowing with fruiting mushrooms. Whatever the revelers did on the mountainside, the drinking of wine was never an element. The rite symbolized the ecstatic rapture encountered through the wild plants that predated the evolution of the grapevine. The mooing bovines in myth, moreover, are always in heat, stung by the bite of the cow fly (*Tabanus bovinis*), who was personified as the spirit of their herdsman prodding them with the sexual lusting of the estrus, sending them into wild dancing (Ruck, 2015a). The tradition survived into medieval Europe, spreading northwards from the Greek settlements in Southern Italy, where it was known as the tarantella, the mad dancing fever precipitated by the bite of the spider. The ecstatic cows surrounded by the flies is a motif suggestive of the *tue-mouche*.

The grape bunches hanging from the grapevine were typically depicted as an analogue resembling the shape of a mushroom. Apart from the numerous poetic descriptions of the experience, there are irrefutably reliable historic accounts of extreme states of mental derangement as late as the Roman period. In graphic and literary depictions, the revel is permeated with hybrid creatures that are obviously visionary materializations from a non-ordinary reality. Among these are the ithyphallic goat-men or satyrs who engage sexually with the revelers and represent the attendants of the deity in his persona before the advent of viticulture. The grazing habit of the goat made it a threat to the vineyard, and hence an archetypal enemy of viticulture. Goats often figure as discoverers of the toxicity of plants as they tend to graze on all manner of wild plants, and the goat-herder, who lived in intimate close proximity of his animals, would have noticed the intoxication induced in his herd by certain wild psychoactive plants. Additionally, toxic plants impart the same psychoactive toxicity to the flesh of the animals that ingest them (Piper, 2013). The quail in particular were deemed drunken in antiquity because of their staggering gait and were noted as dangerous to eat since they often fed on plants that were lethal to humans (Ruck, 2015a). Appropriately the hybrid goat-men attendants of the old version of the god were suitable victims offered to his evolving persona as patron of viticulture and the civilized arts of the theater. Tragedy is so named as the honorific song sung for the slaughtered goat that is the archetypal enemy of the grapevine. In the ritual picking of the grapes for the vendange, the harvesters are depicted miming satyrs.

In Vedic and Avestan traditions, wine, although the most obvious intoxicating candidate, was never a surrogate for the entheogen, probably since it represents the antithesis of the wild mushroom. From the latest antiquity in the fourth or fifth century CE, Nonnus of Egyptian Panopolis in his *Dionysiaca* describes the fight between Dionysus, returning with his revel entourage from their conquest of the Indians of the Indus Valley, and the

supporters of the Greek Perseus, a battle that epitomizes the antithetical contest between the wine triumphant and the aboriginal mushroom of Mycenae and the Hindu Soma (Ruck, 2014). The contest of Perseus versus Dionysus ends without victor since Hermes intervenes to reconcile the two brothers, both sons of Zeus. In this ultimate conflict, Dionysus employs the diamond as his weapon. It was reputed to have the power to repel all venoms, deflecting even the toxicity of the mushroom that was the Gorgon head. As an opponent of Dionysus, Perseus is fulfilling the same role as Pentheus of Thebes and Lycurgus of Thrace, who both opposed the advent of the civilizing gift of wine. Lycurgus, as the 'Wolfworker,' has a name that associates him with traditions of lycanthropy, and Pentheus, as the 'Suffering' complement to the Joy of Dionysus, was decapitated by the revelers, who placed his head atop the thyrsus as the analogue of the ivy and the other wild plants gathered on the mountainside amid the mooring of mushrooms.

The Wine Mix

Like the mediating potion of the *kykeón*, wine was a mixture that honored the toxins that predated viticulture by adding them to the vinous medium. Thus wine was customarily drunk diluted with three or four parts water, but even diluted it was extraordinarily potent. As little as a pint of diluted 4% alcoholic content drunk over a period of several hours in a succession of rounds could induce extreme intoxication. Only four rounds could result in mental derangement, and further drinking ended in a brawl. Alcohol itself was unknown as the intoxicant in antiquity. Distillation of liquids was not discovered until the fourteenth century CE, when the distillate was named alcohol by analogy to the process for metallic distillates and equated to the *quinta essentia* (quintessence, the 'fifth' quality) that Aristotle had postulated as the element of the celestial bodies that permeated matter as the spiritual soul (Ruck *et al.*, 2012). This clearly derives from the ancient tradition that the wine served a sacral function. Since the alcohol produced by natural fermentation is limited to around 13%, after which concentration the aqueous environment becomes too inhospitable for continued growth of the fermenting yeasts, the toxicity of the wine was due to these fortifying herbal additives. These included even deadly poisons like hemlock in sub-lethal dosages and venom milked from serpents. This tradition survives in the modern Greek folk wine of *retsina* and in the demotic naming of the drink not 'wine' (*[w]óinos*), but the 'mix' (*krasi*). A recent archaeological discovery of an intact wine cellar from the mid second millennium BCE confirms the presence of psychoactive additives to the wine (Ritter, 2013). The tradition survives in certain rural wines of Europe today fortified with substances such as the dermal secretions of salamanders and toads.

The additives represent the toxins that predated viticulture. One of these additives appears to have been actually a mushroom. A Greek fifth-century red-figure *hydria* found in a cemetery of ancient Ainos (modern Enez, Turkey) depicts what is obviously a cultic scene, probably relative to the funerary rites performed for the burial of the deceased. A mushroom is highlighted as a special ingredient to be added along with other plants (perhaps bryony or smilax) to the mixing of a *píthos* urn of wine (Ruck, 2014).

Maronian Wine

The Thracian provenance of the *hydria* vase suggests that this particular wine was the legendary wine of Maron, a priest of Apollo and a descendant of Dionysus. In the Homeric *Odyssey*, Odysseus uses this wine to intoxicate the Cyclops Polyphemus. It was so potent that it would have required twenty parts of water for dilution. In the Roman period, a vineyard was still marketing a version of this heroic wine. On the testimony of the Roman governor of the region, it still required eight parts of water to be drunk safely. The blinding of the drunken Cyclops is depicted on the neck of the Eleusinian *píthos*, above the scene with the jug-headed Gorgons. The two scenes are probably complementary. A single tear in the shape of a mushroom drips from the eye of the blinded Cyclops. Both scenes are decorated with graphic designs termed *grecas*, which are interpreted as representations of entopic vision, the onset of chemically altered sight, where the eye begins to see the coursing of the blood flow across the retina (Wasson, 1986). Such whirling graphics are documented from prehistoric rock art. This mushroom-infused wine is particularly associated with Thrace, where archaeological evidence indicates that a mushroom cult existed dateable back at least to the generation before the Trojan War and the mythical tradition of Orpheus and the sailing of Jason with the troupe of Argonauts (Markov, 2008, 2014; Kiotsekoglou, 2014; Samorini, 2012).

In addition to the numerous megalithic natural rock formations that resemble mushrooms, a cave at Thracian Ismara/Maroneia that served as a sanctuary presents a fungal likeness in the configuration of its entrance, two adjacent openings like eyes with an overhanging rock configuration giving the impression of a stipe as nose supporting a mushroom cap as forehead, imparting a fungal face of the goddess to the mountain (Kiotsekoglou, 2014). The design resembles the fifth-fourth-century BCE marble bas-relief votive plaque of Eukrates found in the excavation of the Eleusinian sanctuary, the *ex voto* of a blind man who saw the vision; it depicts his eyes, with the goddess rising above against a hemispherical red cap as a sunrise. The same configuration of visionary eyes and fungal nose bridge occurs on silver and gold tablets found in the seventh-century Thracian sanctuary of Demeter at Mesimvria Zone. Persephone as a head rising from the ground was the essential vision at the Eleusinian Mystery sanctuary, and she is so depicted, attended by satyrs, on Greek vases. The fourth-century coinage of Thracian Maroneia employs the motif of the bunch of clustered grapes in the configuration of a mushroom. The fungal head of Persephone bears comparison to the prophetic head of Orpheus, of which there were several in caves throughout Thrace, from which could be read oracular responses, interpreted from the enigmatic magical markings on its surface (Ruck, 2014). Like Pentheus, Orpheus was decapitated in a Dionysian revel. Orpheus was cited as the founder of the Eleusinian rite, and although he belonged to the generation before the Trojan War in the mid second millennium BCE, he was also involved in the seventh-century patriarchal reorganizing of the rite, indicating that Orpheus is obviously a figure of mythologized history. There are two sources for the Mystery that combine and are reconciled in the patriarchal revision, one is from Minoan Crete of the goddess with the opium poppy, and the other is the Thracian Orphic origin, which involves the reciprocal complementary opposition of Apollo and Dionysus. Athens was a mythical relative of Thrace through the abduction of their princess Oreithyia by the north wind Boreas as she was gathering magical plants with a group of maidens called the Pharmacists.

The pre-patriarchal revision of the Eleusinian rite involves the wild plant cited as the *nárkissos* in the etiological myth of Persephone's abduction. The actual plant is probably the sea daffodil, *Pancratium maritimum*, which is illustrated in Minoan frescoes and a gold signet ring, depicting women with bee-heads gathering flowers in a visionary context, and on Mycenaean sacral swords. As its Latin nomenclature as 'allpowerful' (as in the athletic contest of the *pancratium*) suggests, the daffodil is psychoactive. It is not difficult to see that the flower resembles the vulva surrounding the reproductive stamens and pistil. By the Roman period, this daffodil had become identified as an ingredient compounded with olive oil in an unguent used by the Magoi Zoroastrian priests of Mithras to confer grace and power. This inevitably involves it in the tradition of the *haoma* sacrament, for which reason it was also identified as an orange-red flower. The opium of the Minoan goddess was similarly commemorated in the transition to the patriarchal revision as the pomegranate that inseminated Persephone to engender the Mystery child, since the red fruit of the pomegranate resembles the capsules of the opium poppy, similarly filled with its profusion of seeds.

Common to all the Thracian megalithic sites is their proximity to a water source, a river or a fountain spring, often haunted by a nymph, whose male mate is the river. A similar motif occurs at the Eleusinian sanctuary with the Sacred Well that lies beside the great portal to the sanctuary. The water from this well was spilled from two urns in the ritual of the 'full-pouring' (*Plemochóē*) as the inauguration of the Mystery, accompanied by the words written on the wall beside the double-gated entrance, 'Rain! Conceive!' Thus the goddess was invoked to birth the Mystery child that would culminate the ceremony.

The megalithic Thracian monuments often served as markers for organized necropolises or cemeteries. Many Greek and Anatolian phallic tombstones from all periods survive in the shape more correctly recognized as a mushroom. The asymmetry of the glans is never shown, nor the urinal duct nor the testicles, and the knob is often flat or spherical. Both the duct as an 'eye' and the testicles, in contrast, were elements commonly included in the sculptural and painted representations of the phallus and its metaphoric deployment on the comic stage. As the scholarly authorities on Greek burial customs concluded, none of these tombstones bear the slightest resemblance to the organ which the Greek artists knew so well and the only group of objects which they all can be said to resemble is toadstools (Kurtz *et al.*, 1971). In fact, 'mushroom' appears to have been a metaphor for both the erect penis and for the burial coffin or the tomb.

A tombstone from Dascylion in ancient Bithynia on the shore of the Black Sea presents a particularly fine example of these ancient mushroom tombstones. The deceased Lysandra is depicted seated between two butterfly Psyche souls, like Celtic fairies, in a niche carved into the cap of the mushroom. Hermes as the escort of souls is carved into the stipe as a herm-pillar with penis, flanked by dogs or wolves.

Ionian Enlightenment

The Greeks obviously came into contact with the Achaemenid Persians in the sixth century through the expansion of their empire, which ushered in the period known as the Ionian Enlightenment and would culminate in the two wars at the beginning of the fifth century with the invasions of Darius and his son Xerxes ten years later. The sixth-century philosopher Pythagoras of Samos was initiated into the *haoma* rites while a prisoner in Persian-controlled Egypt. Ovid described what Pythagoras experienced as a journey in the spirit to the deities far-off in space to drink down with his eyes what Nature denies to human vision. In addition, disgraced aristocratic Greek politicians commonly sought asylum with Persian satraps and participated in their secret initiatory ritual (Ruck *et al.*, 2011). Their *haoma* sacrament, however, was known much earlier at least by the mid second millennium as [*h*]ómomi, which is the original for the moly (*mólú*) of the Homeric tradition, the plant that Hermes gave to Odysseus as an antidote for the drugs of the sorceress Circe.

On the comic stage of Athens of the Classical period, this Persian sacrament was well known and associated with Thracians. In Aristophanes' *Wasps* (422 BCE), it was visionary, inducing clairvoyance, and described metaphorically as a herded bull, and a lethal potion of its blood in a scene enacted by two Thracian slaves in an obscene routine of mutual fellatio, with the mushroom identified by its common metaphor as an erect penis whose ejaculate induced a Persian nodding sleep. It bellowed when strenuously erect with a snotty discharge, punning upon the mooing *mykes* and mucus (Ruck, 2012).

Among the Thracians, the mushroom cult was still empowering their kings as late as the first century BCE, as it did Darius, as witnessed by a Greek doctor assigned to the Persian court, in an intoxicated celebration of Mithras reserved solely for him. The cult also appears to have been the basis of lycanthropic rites binding their elite into a brotherhood of warriors. One of the Scythian contingents in the Persian forces was named the *Saka Haomavarga*, which means the '*Haoma* wolves' (Gershenson, 1991) The lycanthropic transmogrification was known to the Homeric tradition, as narrated in Odysseus' encounter with the Thracian horseman *Rhesus* in the *Iliad*. The event was also the subject of the *Rhesus* tragedy attributed to Euripides, when the dead horseman is cited as involved in Thracian Mystery rites (Ruck, 2014). *Rhesus* is probably a version of the Thracian god Sabazios or Zalmoxis. Darius' troops also knew of the mushroom's metabolite in urine. These are instances of a widespread cult better known among the Nordic berserkers of the medieval period, who materialized on the battlefield as wolves or bears, but which can be traced back to antiquity. The Emperor Trajan confronted it in his encounter with the Thracian Dacians, named for the 'wolf' and who bore into battle the ensign of their wolf-serpent *Draco*, bellowing in the wind. The Emperor was met by a Dacian shaman who read a warning to him off the markings on a mushroom cap.

Lycanthropy

The particular mushroom that fits the parameters of all these indications is the *Amanita muscaria*. It alone of the fungi is documented as inducing heightened physical strength and heroic fury in battle, and the scabby white remnants on its expanded cap allow a written message to be interpreted from its surface, and it alone is noted for its superior potentiated metabolite in urine. Many other Indo-European tribes were similarly named or associated with the wolf, and the common ritual indoctrination of the adolescent males into packs of wolves is documented among the ancient Spartans. The deity presiding over these packs as the assembly of his herd was the god Apollo, and he is the deity in Greek tradition involved in the motif of lycanthropy. As herdsman, he was invoked to protect the flock from the depredation of the wolves, but as the wolf god he also culled his flock as recipient of human victims.

In the evolution of Greek culture, Apollo was distanced from his darker persona and his lupine manifestations as the 'wolf' (*lykos*) were given a false etymology derived from the 'light' of the sun and its solar illumination. *Lykios* was fancifully associated with Latin *lux* for 'light' and Greek *leukós* for 'white,' and Apollo's epithet was explained as derived from the 'sun shining and making everything white.' The god's tenuous claim to the light of day, however, is reflected in the word for the dangerous marginal time of the dawn and the twilight as the 'wolf-light' (*lykóphos*). Similarly, the liminal threatening time when werewolves were abroad, the 'wolf-walk' (*lykábas*) was forced to mean the 'path of the sun' and glossed as a period of time, perhaps a year. The fulfilment of a period of time, however, implies termination or the temporal end, when the ultimate victim

would be required. In the traditional antithesis between Apollonian and Dionysian modes of cognition, Dionysus assumes the burden of Apollo's lycanthropic involvement, freeing his brother to preside over the transmutation of toxicity into the entranced enthrallment of music and the metamorphosis of the deadly twanging of the thong of the bow and its poisoned arrows into the harmonized strings of the lyre. The words for 'arrow' and 'poison' are homonymous (*iós*) in Greek.

At Delphi, the original mid second millennium sanctuary was the Wolf Cave on Mount Parnassos, one of the largest subterranean cave complexes in Greece, with a succession of forty chambers leading deep within the sacred mountain. A rock formation within its entrance presents the likeness of a wolf. As the deity transitioned to his revised patriarchal Apollonian persona, the sanctuary was moved to its present location ever since the seventh century lower down the mountain, and the Cave above was entrusted to Dionysus or Hermes. The ecstatic revels there were still celebrated as winter rites of plant gathering well into Roman times, during which period Apollo would absent himself from the sanctuary. As a commemoration of his more ancient manifestations, he was forever linked, however, to the Wolf Cave since the oracular priestess would prepare herself for her ecstatic possession by the god in the below-ground chamber at the back of the Temple by bathing in the Castalian Spring that flowed from the subterranean lake within the Cave to surface at the base of the twin cliffs that loom above the present Temple sanctuary and she was named the Pythoness, after the former hermaphroditic serpent deity who once resided within the Wolf Cave as an oracle of Earth, instead of the Olympian Zeus as father of Apollo.

When it is not the brothers Dionysus or Hermes who assume the burden of Apollo's displaced darker person and his involvement with deadly or mind altering wild and primordial toxins, it is a beloved son like Asklepios, patron of druggist/doctors (*iatroi*), or Ion of Athens, eponymous ancestor of the Ionian tribal group, or Iamos, the founder of the brotherhood of shamans at the sanctuary of Olympia. The mythical tradition of them all involves them in the botanical lore of entheogens, with both Ion and Iamos providing opportunity for poetic elaboration on the etymology of their names and the motif of the *iós* arrow toxins derived from sacred plants (Ruck, 1976). This is true also of Apollo's homoerotic chosen victims, like Hyacinthus, Daphnis, and Cyparissus, who all metamorphosed into psychoactive or funereal plants (Ruck, 2015a). The homoeroticism was ritualized in the indoctrination of adolescents into the military packs of wolves. There was a tradition that even the Castalian Spring was named for the maiden who was the first of the many victims tossed into its waters from the twin cliffs high above.

Orpheus of Thrace was another of these beloved victims (Ruck, 2014). Despite his devotion to the solar manifestation of Apollo, he is named as the 'Orphan' from the light of his deity and was harvested as a primordial psychoactive anthropomorphism in the Dionysian revel. In the case of Kyknos (Cygnus), named as the 'Swan,' his grieving sisters metamorphosed into trees whose tears fell as lumps of amber. Such resinous discharge of trees was the commonly supposed origin of mushrooms, and all of these figures have a similar involvement ultimately with the fungus (Ruck, 2015a). Kyknos himself metamorphosed into the swan, which as Apollo's special bird, sings the swansong, the first and last utterance it ever makes, superlative, beyond all imagining, being the description of the paradise beyond this life to which the deity sends his victims.

Phrygian Cap

The lycanthropic motif is the origin of the Thracian/Phrygian cap. It provides the botanical name for the mushroom's cap as the *pileus*, implying an anthropomorphized creature beneath it wearing it as its hat. It had a long continuance through medieval and Renaissance tradition until modern times as a marker for initiates into the secrets of the ancient Mysteries (Ruck *et al.*, 2011). The Phrygian cap was originally a fox pelt, complete with snout and ears, sometimes the entire animal (Ruck, 2014). The Thracian reveling plant gatherers of the pre-viticulture Dionysus were named for this pelted cap. The fox is a canine analogue of the wolf, and its pointed snout and red color were stylized in the drooping felt versions known as the liberty cap, awarded to liberated slaves, although the original liberation freed the initiate from the restrictions imposed by the human condition.

The red cap is as ubiquitous as the little creatures that materialize in the lore of Europe, most notably in the tale of 'Little Red Cap' (*Rotkäppchen*), known in English as 'Little Red Riding Hood,' and the episode of lycanthropy and with a similar ultimately ethnobotanical referent (Ruck *et al.*, 2007). The English title

predates the Grimm brothers' collection, and the 'riding hood' as a term for the Phrygian cap indicates that the heroine of the tale is on a journey that will culminate in sexual awakening with her aged grandmother as initiator and a lupine transmogrification in the belly of the devouring wolf. Digestion is a metaphor with alchemical implications of transcendence. Nineteen-century illustrations of Little Red's encounter with the wolf often include the fly agaric growing in the woodland scene, which would seem to indicate that the illustrator was privy to the secret.

Eggshells

The etiology of the red cap was explained as the remnants of the egg from which the twin Dioskouroi (Dioscuri) were hatched, each wearing a half shell. As such they were cited as patrons of the Mystery of the Great Gods (*Mégaloí Theoí*) of Samothrace, which was second only to the great Eleusinian rite in antiquity in reputation and importance. The twins were inseparably bound to each other. Although only one of them was immortal, the son of Zeus, while the other was mortal, the son of their mother Leda's husband Tyndareus, they vowed to share their dual fate, dying together on alternate days, and returning the next. They obviously imply a similar aspiration for the initiates as they sailed the perilous voyage through life, and hence the twins were cited commonly as patrons of seafaring, although their true significance refers to a metaphysical journey. They could be represented as two adjacent *amphorae* vessels of the Mystery's Thracian wine of Maron, especially potent from its fungal additive, whose toxicity is indicated by the serpents entwining the vessels. Numerous drinking cups that were the property of the priesthood survive in the ruins of the Samothracian sanctuary, leading the archaeologist who excavated the site to conclude that excessive drinking to the point of intoxication was clearly an element in the Mystery (Lehmann, 1954). Similar rites involving the same complex of deities occurred elsewhere, and drinking from special sacred vessels was always an element, with the cups then shattered to exclude them from later profane usage.

The Dioskouroi could also be depicted as two posts, representing the half eggshells of the curved red caps, joined by a crossbeam, as if they were Siamese twins, before their separation. In this configuration, they resembled their cousins, the Moliones, who were similarly hatched from a single egg, but joined at the waist as Siamese twins (Ruck, 2015a; Ruck *et al.*, 2001). They are the mythical prototype of the spherical primordial humans that were sliced in half like an egg in Aristophanes' tale of the Hermaphrodite in Plato's *Symposium*. This tradition of the Siamese twins encodes another attribute of the *Amanita muscaria* that identifies it as the magical plant that sprouted from the liver of the tormented Titan Prometheus that served as food for eagles (Ruck, 2015a). Eagles' fare is a version of raven's bread, a metaphor for the mushroom, because of the birds' fondness for the *Amanita* (Klapp, 2013). As food for the thunderbird, it occurs also in indigenous North American tradition. Medea plucked the Promethean mushroom to compound the dermal unguent that she entrusted to Jason (Iason) to fortify him with the superior strength that allowed him to yoke the fire-breathing bulls, with which he plowed the field to sow the primordial toxic crop that sprouted from the fangs of a monster serpent. He is named Iason, like Ion and Iamos, for his involvement with this *iós* toxin.

Dumbbell

Medea cut the root of this Promethean plant amid the sound of bellowing and mooing from the earth, and it is described as growing with a double stem (*kaúlos didúmos*), not a branching stem. It is, more exactly, a 'twin' stem. The epithet of the Dioskouroi was the 'Twins', *Didúmoi*, and they became the constellation Gemini. This encodes a riddle since no plant grows from the earth with a twinned stem, side by side, except the *Amanitas*. As the subterranean nodule or egg that develops from the mycelium into the fruiting mushroom expands, the stem or stipe/trunk extends in both directions, pushing the base apart from the cap, shattering the eggshell, producing a shape like a dumbbell, easily recognizable when plucked from the ground. It is also the traditional shape of the sacred thunderbolt that inseminated the mushroom at its conception from the heavens, meshing celestial fire in the wet matrix of matter. The thunderbolt of Zeus in this dumbbell shape, often with conventional lighting flashes attached and sometimes with wings, is the Greek version of the *vajra* thunderbolt of Indra, and in Buddhism it is symbolic of the thunderbolt experience of *Bodhi* or 'awakening.'

The Mystery child could be depicted also as emerging from the cosmic egg, pushing the two hemispherical eggshells apart, marked with the signs of the Zodiac as indication of the transcendent return to the celestial

realm (Ruck *et al.*, 2011). This double-stemmed herb of Prometheus, moreover, was the same color as the plant involved in the rituals of the Wolf Cave at Delphi and in the birth of Ion of Athens in the cave beneath the Acropolis. In this version, the plant goes by the name of Krokos (crocus), chosen for the phallic appearance of the blossom as it emerges from the earth. In mythical elaborations, Krokos was anthropomorphized as another adolescent who fell victim to the deity, and he was linked with another lover called Smilax or 'bindweed,' and they both represent the primordial plants that predate the evolution of viticulture. The crocus is analogous to the *nárkissos* and Minoan frescoes depict both monkeys and maidens gathering it. The monkey was emblematic of little primordial humanoids, and they were mythologized in the figure of the Kerkopes, whose name designates them as having the appearance of a 'tail,' indicative of their fundamental phallic identity. They survived in European folklore as the German *Kobald*, the French *gobelin*, and the puck of England, ecstatic mischievous little creatures, like fairies, in the entourage of the Dionysian plant-gathering revel.

Phallic Grotesqueries

Although the Dioskouroi were depicted as idealized youths, there were analogues of them in the Mystery of Samothrace that made them dwarfish and ithyphallic, since the cult of the Great Gods encodes the secret that the divinities were actually great in power, but the opposite in stature. The Dioskouroi were warriors and a fanciful version of them occurs as the *Kaulomykètes*, little men comprised of the 'stem' (*kaúlos*) uplifting the mushroom caps as a shield above their heads. These creatures must obviously be no bigger than mushrooms themselves. This stem, moreover, was a common metaphor for the erect penis, which reduces the entire anthropomorphism to its phallic function as the 'mushroom' penis. As *Kaulomykètes*, the little warriors have an asparagus stem as their sword, a vegetable of choice for its phallic thrust and its noticeable effect on the scent of the urine (Ruck, 2015a).

In this configuration with uplifted shield, the Dioskouroi mushroom warriors are analogous to another of their anthropomorphisms in the Mystery of the Great Gods as the Corybants ('helmeted-dancers') and the Curetes ('boys'). Although they, too, are idealized youths, they sprung from the fingers of Rheia, the mother of Zeus, as she grasped the ground in labor. The Cretan Caves on Mount Dicte and Ida, where Zeus was born, were equated with the sacred Zerynthian Caves on Samothrace and throughout Macedonia and Thrace as sites for the Mystery. The Corybants danced ecstatically, clashing their shields to drown out the sound of the baby's birthing and are typically depicted with shields uplifted and standing on a single foot. The pose is symbolic and it appears also in depictions of Mithras, where it encodes the same fungal identity of the *haoma* sacrament (Ruck *et al.*, 2011). Mithras himself is traditionally attended by two male torchbearers, who always stand with their legs crossed, making them essentially one-footed and also symbolizing the entrapment of the celestial fire in matter, emblematic of the sacred mushroom. The Dioskouroi often are depicted with these same crossed legs. The torchbearers always depicted with one holding his torch thrust downward, the other upward, on either side of the Cosmic Bull, signifying the entrapment and liberation of the celestial fire through the sacrifice of the bull.

As finger creatures from the digits of Rheia, plucking plants in ritual mimesis of birthing, the Corybants are analogues of the tiny creatures named for the 'fingers' as dactyls. They often occur as a brotherhood of five, African pygmies, a fistful of them, from Latin *pugnus*, cognate with pugilist for 'boxer,' which is probably responsible for the portrayal of the Dioskouroi as boxers, although the Greek *pygmé* is the measure of a forearm or cubit, making them approximately a foot tall. The actual five-foot Pygmies of Africa were named after their mythological etiology and were considered sacred and much in demand as holy magical curiosities by the Egyptian pharaohs. This tradition continued through the Renaissance in Europe with the dwarves in the entourages of the royal families and in folkloric heroes like Tom Thumb, only so big as a thumb, and swollen like the penile member that is his essential identity (Ruck *et al.*, 2007).

Another version of them in the Mystery was the black-skinned *Kábeiroi*, misshapen dwarves, the males with prominent erections. The sorceress Circe was depicted as such on surviving vessels from the Mystery as she compounds her potion for a *Kabeiric* ithyphallic Odysseus, sailing on a drunken amphora of the special wine of the rite (Ruck, 2015a). On the stage in Athens, the tragedian Aeschylus depicted the *Kábeiroi* in an orgy drunk on the wine of Maron in his satyr play. In Aristophanes' *Lysistrata* (411 BCE), the divided chorus of combatting males and females was staged as dual troupes of *Kabeiric* grotesqueries in a parody of the Mystery as practiced on the island of Lemnos. The *Kábeiroi* were also imagined as crabs, wielding their pincer claws as

henchmen of Hephaestus in the metallurgical volcanic crucible of alchemical transmutation, forging a cure for ordinary blindness. The metallurgist's pincers were called 'crabs' and Aristophanes staged them in the *Wasps* (422 BCE) as pubic lice impersonated by children, obscenely dancing around the erect phallic personification of the Persian *haoma* sacrament, with which the comedy had begun (Ruck, 2012). As the mythical figure of the Crab, the creature was involved in the motif of the toxins that anointed the poisoned arrows of the hero Heracles, and it was ultimately transported to the stars as the constellation of Cancer (Ruck, 2015b).

Penates

These Mystery figures were associated with the Etruscans, who were thought in antiquity, perhaps correctly, to have been Trojans who passed though Samothrace on route to Italy. *Kábeiroi* may be an Etruscan word, and inscriptions in an Etruscan-like language are preserved on Lemnos. On Samothrace, portions of the liturgy were recited in a no-longer comprehensible pre-Greek or Pelasgian tongue (Cooper, 2000). These creatures of the Mystery were known to the Romans as the Penates, idealized adolescent males in historical times, although the original Penates that Aeneas carried out of Troy to the banks of the Tiber were probably *Kabeiric*. They were preserved there in historical times, probably as pious forgeries. It is significant, however, that the Penates as displayed in private houses were always statuettes or figurines, little people. The twin posts of the *Dioskouroi* joined by the crossbeam could be interpreted as an iconic glyph of a shrine or of the household placed under their guardianship, in which form the Spartans carried the emblem into battle as a standard in front of their army. The glyph was called the *dókana*, derived from the Greek verb *déxasthai*, meaning 'to receive' (Waites, 1919). As a shrine, it represented the opened tombs in Sparta that hospitably received and released the twin brothers on alternate days, and it symbolized the brotherly love, mortal and immortal, that spans this world and the grave, open to receive and release its guests, binding the household to the other realm, under the sacrosanct obligation of reciprocal 'hospitality,' *philoxenía* or *theoxenía*. The Dioskouroi were summoned and expected to materialize as guests at the table of their host (Klöckner, 2010). A similar linkage of guestfriendship (*xenía*), the reciprocal role of host to guest, was the ultimate benefit promised to the initiates at Eleusis.

The Roman Penates were guardians of the household's store of provisions in the innermost recesses of the home, the *penus*. A small portion of the meal was thrown on the fire as a token offering at every dinner as a sacrifice to remove the taint of primordial toxicity, after which the attendant slave would announce that the food was now safe to eat. The etymological derivation from the 'innermost' was more significantly connected in antiquity with their phallic identity and the motif of 'penetration' into the secret shrine of the household's goddess of the central hearth and into the inner core of life, with connotations of sexuality and mystical vision (Bonnefoy, 199). The toxicity of the creatures that sprouted from the primordial intrusion of the plowshare into the vulva of Earth was mythologized in the tales of the Sown Men, the autochthons who sprouted from the serpent fangs. They were tricked into internecine strife, a battle that blamed them for their own fraternal sacrifice, leaving only a few remaining, whom the plowman took into his own family as in-laws.

Tages

The Etruscans had their own version of the autochthonous creature. This was the tiny male named Tages, who popped up out of the ground in the path of the plowman and founded their religion. People gathered around this miraculous apparition and in the presence of the entire populace of Etruria, what it said was written down from dictation as the holy book that was the foundation of the Etruscan science of divination. His father was Genius, the *creator spiritus* or 'creative spirit,' sometimes winged fairylike, that personified an individual's manifestation of divine nature, resident in all aspects of creation, including the observances of communal life, the norms of civilization and its ritual procedures, linking them to the realm of nature and the cosmos (Grummond, 2006). Sometimes Tages is depicted as just a talking head emerging from the ground, obviously not yet capable of walking. All the autochthons display a similar ambulatory difficulty, indicative of their botanical identity, and if they walk at all, they tend to be lame or have but a single foot (Lévi-Strauss, 1955). As a talking head, Tages resembles the prophetic heads of the harvested Orpheus, and it is likely that what they said by dictation was read off the markings on their heads, like the message encoded on the mushroom of the Dacian shaman, presented to the Emperor Trajan. Tages usually wears the conical red Phrygian cap, and his basic identity is phallic, wearing a pouch as a locket around his neck containing phallic objects as a protective

amulet, such as was customary for Roman male children until puberty, and then stored as a memento and brought out again for display on special adult honorary occasions.

Tages is the Latinized version of his name, which in Etruscan would have been Tarchies, probably a variant of Tarchonus, the Etruscan version of the Latin Tarchon, the legendary founder of the Etruscan city of Tarquinia, north of Rome. Tarchon was the name of the plowman, which makes him identical with Tages, and they were customarily portrayed together, the little talking head and the plowman recording the dictation. The ancient Etruscan cemetery at Tarquinia dating from the eighth century BCE contains a number of stone urns containing the cremated remains of the deceased, covered with hemispherical covers, presenting the likeness of mushrooms. It is the pattern copied in the more elaborate Etruscan multi-chambered tombs, which are cylindrical and topped with a grassy mound, like the Mausoleum of Augustus, which are probably mushrooms with expanded stipes. As philhellenes, the Etruscans often placed Greek vases as funerary offerings with the deceased in these mausoleums. The placement in the tombs allowed them to survive until modern times. The vase depicting Perseus with the decapitated head of the Gorgon Medusa is one such vase. Mushroom shapes are prominent in many of these. One of them is a large fourth-century BCE platter, over two feet in diameter, depicting the abduction of Persephone, with the rim decorated in raised knob-shaped mushrooms, which are not intended as handles (Ruck, 2014).

The special knowledge that Tages entrusted to the Etruscans was divination through the inspection of the liver of a sacrificed animal, haruspicy (hepatoscopy). It is an art of the greatest antiquity that can be traced back to Mesopotamia and even earlier, with references both in the Bible and in Homer. The priest inspecting the liver is traditionally depicted with wings, indicative of his shamanic rapture, and standing with one foot raised and resting on a rock, mediating between earth and the celestial realm, and Etruscan mirrors portraying the ritual often have the winged Genius on the base handle.

Cosmic Liver

Since the liver is essential for life, the largest and weightiest of the entrails and containing the greatest amount of the life force in the form of blood, it was considered the center of personal existence. The markings of the universe could supposedly be read off its surface, and thus it was a microcosm of the vitality of the celestial realm. The haruspex, by manipulating the liver, could also influence events in the cosmos that it mirrored. Such power was seen as a threat to the established order, and astrologers were on occasion either banned or executed by a succession of Roman Emperors. The liver as food for the eagle was the organ that was the site of the daily torment of the chained Titan Prometheus as punishment for his creation of man and the theft of fire. He is the mythical prototype of the clairvoyant seer, named for his 'Fore-thought' or prognostication. The liver was considered the primordial organ of the body, the part that developed first in the fetus, around which the rest of the person grew in the womb. It is the organ that functions in hemolysis, the cleansing of the blood from toxins, and thus it is a motif in botanical agencies for shamanic rapture. Although it is unlikely that the ancients knew of the filtering function of the liver, it was thought to be the organ through which the digested food from the stomach entered the bloodstream. The liver would have the highest concentration of psychoactive toxins, reabsorbing what the kidneys did not eliminate into the urine. The theft of fire, hidden in the narthex, involves the motif of root-cutters and herb-gatherers. The bitter brownish or greenish-yellow secretion of the liver called bile or gall (Latin *bilis*, Greek *cholé*, both derived from the Indo-European root *ghel-* for 'shine,' yellow like 'gold,' with which it is cognate) is another element in this motif. It is listed as two of the basic humors of the body (melancholic, choleric) and was associated in Roman thought with rancor and madness. 'Gall' was further implicated in the motif of psychoactive toxins by its association with the venom of serpents, which it was thought contaminate plants by contagion. Eating your enemy's liver was equivalent to mastering his soul.

Indigenous Foreigner

The shared identity of the Tages and Tarchon, the autochthon and the plowman, makes the founder consubstantial with the foundation. This is often expressed by the motif of the founder as supposed foreign immigrant encountering himself in the personae of the indigenous autochthons, like Cadmus at Thebes, who slew the serpent to plow the field with its fangs and subsequently metamorphosed himself with his bride into

serpents. In the exemplar of Prometheus, the creator of man is consubstantial with the primordial organ of the prognostic liver that serves as food for eagles, which implies that he is a fungal personification. In Corinth, there was a tradition that in former times men had indeed first sprouted from the ground as mushrooms swollen after a rainfall. On the comic stage of Athens, Aristophanes costumed Prometheus in the *Birds* (415 BCE) with his phallus unfurled as a parasol, in imitation of the Shade-foot fungal anthropomorphism (Ruck, 1981). There could not be a more blatant revelation of the mushroom's central role in Greek tradition as the origin of all human intelligence and science, as catalogued by the Titan himself in the *Prometheus* tragedy ascribed to Aeschylus.

The mythical tradition of these little fungal creatures mediates the opposition between the realms of life and death in terms of the relationship between the primordial toxicity of the wilderness and the inaugural plowing of the agrarian field to plant the crops of civilized culture. Hence, it is fundamental to the founding of cities, an accord and covenant with the forces of primitivism. In narrating the arrival of the Trojan Penates to Italy, Virgil in the *Aeneid* was required to include a bizarre and enigmatic event recorded in the supposedly historical accounts. This involved the fungal identity of the plant most emblematic of the wilderness and as the *haoma* sacrament, most indicative of the transcendence toward culture (Ruck *et al.*, 2013; Ruck, 2015a).

Fairy Tables

It was predicted that Aeneas and his men would be cursed to endure such extreme hunger before they founded the new settlement in Italy that they would be forced to eat their own tables. The curse was an item of arcane tradition, a brief riddling mention of a weird mythical event apparently recorded in some now-lost work preserved in the Alexandrine library, probably elaborating some ethnographic anthropological motif, which was a particular interest of the scholar-writers who presided over the library and its vast collection of texts. Virgil discussed it with historians among his friends, who were puzzled by its meaning. He, however, was required to include it, and he figured it out and transformed it into an innocuous surrogate, as suited the rational sobriety promulgated by his patron Augustus as a national agendum or at least as the virtue he claimed as destined Emperor.

The mythical precedent was the repulsive tables of food defiled by the excrement of the Harpies like a swarm of monstrous flies, which was all that the starving Thracian prophet Phineus had for food, but which also was responsible for his gift of clairvoyance, which to say, that the food was psychoactive or an entheogen. The Harpies were imagined to materialize as a whirlwind and to snatch people away, hence their name a 'Snatchers,' sometimes demonized as ornithological human hybrids, but also portrayed as beautiful women with wings. Like the fairies of Celtic lore, they were accused of stealing people away to their netherworld realm on a blast of wind, called an elfin eddy. A person was apt suddenly to disappear from sight in this world, in a fit of rapture, possessed in the clutches of these ravishing Harpy virgins. Hence, a visitation by the Harpies had orgasmic connotations of shamanic ecstasy, which is the common metaphor in Greek for mystical vision. The edible tables are the folkloric motif of the fairy tables, a loathsome slimy red tabletop, supported on a pedestal and spread with the dainty morsels of the scabby white remnants of the *Amanita's* shattered universal veil, and swarming with the flies attracted to the contaminated feast. The fairies also scatter round breads about the ground, but the food is cursed and should never be eaten, except in the times of severest hunger. Conversely, a piece of bread thrown on the ground was the surest amulet to ward off a blast of the dangerous kidnapping wind.

Virgil saves his hero by a ruse of paternal piety from partaking in the ecstatic feasting required for the primordial encounter with the new land that he as founder must settle. Without knowing what he is doing, he follows the precise directions of his putative divine grandfather Jupiter/J Zeus (the father of his mother Venus) as delivered from the oracle at Dodona, spreading rounds of primitive spelt bread upon the ground and heaping them with wild fruits, and after they have eaten them, the curse becomes merely a joke, as his son Iulus (the supposed ancestor of Julius Caesar) notes that they have eaten their tables. The only way to thwart a true prophecy is to enact it in some other way, and this Aeneas, pious as ever, has blindly done. There was no shortage of proper tables for use as equipment aboard his ships and thus the novel banqueting protocol was merely his uncomprehending adherence to the directive from Dodona.

Mithraism

The *haoma* sacrament was directly introduced into Rome in 69 BCE, just the year after the probable date of Virgil's birth, when the general Pompey took the Cilician pirates captive to the city of Rome. As a young man, Virgil probably knew of Mithraism, and a hundred years later, by the time of Nero, there were already well-established Mithraic lodges in the city for him to be the first of the almost continuous succession of emperors to be initiated in what was called 'magical dinners' (Ruck *et al.*, 2011). Earlier versions of the initiation lodges were already prevalent in Anatolia, traceable back to well before the sixth century. The lodges were small subterranean chambers, preferably with a natural source of water, imitating a cave in which the hero Mithras slaughtered the Cosmic Bull, and the initiates, like Pythagoras, experienced a transcendent journey of the spirit to the rim of the universe. The lodges spread throughout the Empire in Europe, Britain, North Africa, and the Near East, although rare in Greece since they already had similar rites associated with Perseus. It indoctrinated most of the emperors, and the army and male bureaucrats who administered the Empire, until the conversion of Constantine, who was himself probably an initiate. The seven sacraments of the Christian Church are modeled on the seven stages of the Mithraic rite. The sixth stage elevated the candidate to the persona of the Apollonian Solar Charioteer as the adoptive son of the Father, which was the seventh and highest grade. As adoptive son, he was pure from the Gnostic contamination of physical conception, correlating with the Platonic ideal of spiritual paternity, a role that Christ also played in the heresy of Adoptionism. Hence, women were excluded from membership in the lodges. It was the Charioteer's role to be offered as symbolic victim to usher in the final apocalyptic Conflagration, after which the cosmos would be renewed as the new age. This is obviously similar to Christ as sacrificial mediator of his Father with humankind, and the Second Coming, which was originally expected within the lifespan of the first disciples.

In Mithraism, the Solar Charioteer and the Father ratified their relationship by a banquet upon the meat of the Cosmic Bull in the form a loaf of bread, marked with a chiastic cross, representing the solar ellipse, which is segmented by the astrological glyphs of the zodiac, intersecting with the celestial equatorial belt, indicating that the bread was meant to symbolize the cosmic sphere, as something heaved up by the fungal leavening to form the heavens. The loaf of sacramental bread thus has the same symbolic relationship to the cosmos as the prognostic liver. The chiastic design was copied in the bread of the early Communion rite of Christianity. Virgil's 'fatal crusts' of round bread in the episode of the edible tables were similarly marked into quadrants, suggesting that the poet may have been a Mithraic initiate. The cross comes to signify the zodiacal marker for the sign that will preside over the new age occasioned by the precession of the equinoxes caused by the wobble in the Earth's axis, ushering in a new age about every 26,000 years. The cross thus also marks the time for the cosmic sacrifice, as time moved from the constellation of the zodiacal Bull Taurus to the Age of the Lamb Aries, and thus it also had implications for the cross of the Crucifixion. Aries as the Lamb also added new spiritual implications to the interpretation of the mythological tradition of Jason and the quest for the Golden Fleece of the sacrificed ram (Ruck, 2015a).

Raven's Bread

The Mithraic bread was served to the two banqueters by the Raven, which was the lowest and first grade in the initiation, representing the sinful entrapment of spirit in matter, which would be released in the final stages of initiation. At the second stage, the initiate became the bride of the Father. The bread was Raven's bread, the common metaphor for the *Amanita muscaria* (Klapp, 2013), and called a bread by analogy to the spongy expansion of the fungus, the microcosmic version of the universe, to which it offered transcendent return. The symbol of the Raven was the chalice, which suggests that the Raven's bread was the fortifying agent in the sacramental potion, as in the wine of Maron, and the drink was metaphorically a cup of bull's blood. Sometimes the Raven is shown handing the drink to the two banqueters in a bullhorn *rhyton* vessel, reinforcing the metaphor. It also was supposedly skewered bits of the bull's roasted meat, although depictions show the Raven pecking at the meat, with the skewer held vertically above the clasped hands of the Father and his adoptive son, above the burning fire in the brazier, which would be quite unlikely in reality. However, the skewered meat presents a credible likeness to the mushroom for which it is the metaphor. Significantly, the sixth grade in the initiatory sequence was Perses, the Persian, who was the 'keeper of the fruits,' and his name suggests Perseus, who was the father of Perses, the etiological founder of the Persian people. The Mithraeum lodges were not banqueting clubs, nor are the tiny confined subterranean chambers appropriate

venues for slaughtering a bull, disposing of the copious flood of its ensuing blood, roasting its butchered flesh, and serving an ordinary dinner. Other aspects of the ritual activity involved miming with animal masks, sexual humiliation, physical intimidation, and rowdy hazing, as is a common feature in initiatory admission to secret societies.

The tauroctony or 'bull slaughter' in Mithraism was a mythical event, often mistakenly equated to the *Taurobolium*, in which an actual bull was slaughtered on a grating above the initiate who was bathed in its blood. This was a rite in the religion of Cybele as imported into Rome in the third century BCE as the Great Phrygian Mother, in which the initiates represented Attis and practiced self-castration in their frenzied ecstasy. Attis was traditionally represented wearing the Phrygian cap and the frenzy of the rite may well have involved a similar fungal intoxicant. The remains of an ancient *Taurobolium* lie beneath the Vatican, but it was not the tauroctony of Zoroastrian Mithraism. Churches, however, were often also built above Mithraea, as in the Church of San Clemente, near the Roman Coliseum.

Soldiers of Christ

The Mithraea resemble drug dens, rather than banqueting chambers, sometimes with other rooms for rituals and indoctrination. Various psychoactive substances were probably involved in the successive grades of initiation, and the chamber was probably fumigated with incenses like cannabis, as seems to have the more ancient custom with the *haoma* cult indicated at archaeological sites, but the role of the *Amanita muscaria* as the bread served by the Raven in the religion explains to a large measure how the mushroom cult was promulgated throughout Europe as the supposed cohesive civilizing force until its official suppression by the Conversion. The third grade of Mithraism, however, was the Soldier, enlisted for the cosmic battle, and it seems likely that the concept of a brotherhood of warriors and its ritual indoctrination, like other aspects of Mithraism, was expropriated by Christianity, as was clearly the case with the sacrament of Confirmation, which made a Christian a soldier of Christ, instead of Mithras.

The *haoma* sacrament probably was transferred to groups like the Knights Templar and medieval knighthood. The ancient wolf sacrament continued, moreover, among the Nordic peoples and persisted in their berserker rites even after their conversion. It also continued in the Eastern Church among Gnostic sects like Manichaeism, whose Persian prophet Mani arose in third-century Mesopotamia, incorporating dualistic Gnostic elements of Zoroastrian religion with Christianity, and which spread to southern Europe in the tenth century and persisted in China until the nineteenth, where they were noted for their ecstatic rituals and their fondness for red mushrooms. Where Mithraism in the Middle East persisted in fringe peoples only marginally assimilated into Islam, Mithras was still celebrated as late as the twentieth century with a sacrament of the *Amanita muscaria* (Ruck *et al.*, 2011). There were also numerous sects of early Christianity with a similar Gnostic dualism and a fungal sacrament which were suppressed as heresies even before the Conversion. In the mid first century, Paul reproached his congregation in Corinth for practicing the Eucharist in a manner that had caused the sickness and death of quite a few of their members (Ruck *et al.*, 2013; Ruck, 2015a). A fourth-century Christian sanctuary uncovered beneath the eleventh-century Basilica of Aquileia north of Venice preserves a mosaic floor ornamented with baskets of *Amanitas* and snails. The chamber was an early Christian meeting hall or agape and the floor decoration is plausibly interpreted as a depiction of the Eucharist (Fabbro, 1996). As recent as the end of the sixteenth century, an epistle of a monk on the Holy Mount of Athos details a miracle: that the Eucharist altar grew into the shape of 'a holy mushroom with its cap in the shape of forty apples which ascended over the holy table and overshadowed the entire sanctuary.' Those found infirm in the cloister who tasted of the holy mushroom were healed (Goldblatt, 1994).

The twelfth-century Basilica of San Vicente in Ávila replaced a nearby Mithraeum. It blatantly displays the mushroom as the food of the celestial banquet on the tympanum of its portal, with the portal itself, as always, indicating a distinctly fungal design, with the opening, either with or without a dividing mullein, suggesting the stipe supporting the hemisphere of the tympanum as its cap (Ruck, 2006). The tympanum itself is half of the almond-shape or *mandorla* that traditionally represents the vulva of the Goddess, assimilated into Christianity as the gateway to Paradise. Only the elite, who reserved for themselves the direct contact with deity, would recognize this fungal design as they passed through the portal to sacred space, but it surely was intentional, an indication of a heretical version of the Eucharist that perpetuated a sacred plant involved in the pagan cults that the Church Dominant had suppressed.

Old Europe

It was, moreover, only the urban centers under direct control of the bureaucracies and the Church that converted. The old religions continued in the countryside and villages (*pagus*), where the country folk or 'peasants' (*pagani*) preserved many aspects of pre-Christian tradition, called Paganism after them. The mushroom cult, in various forms, was one of these, not only as remnants of Mithraism, but also apparently because there were indigenous sources as well, predating the Roman Empire and dating back even to before the Indo-European migrations of the mid second millennium BCE. Shamanism involving mushrooms survived into the twentieth century in places like Lithuania and Iceland, the latter converting to Christianity only in the tenth century and then mainly to improve economic integration with the European mainland (Nichols, 2000). Rock art from the Neolithic (sixth millennium BCE) in Catalonian Spain at Selva Pasquale depicts mushrooms, probably *Psilocybe hispanica*, as dancing anthropomorphisms, with a fresco of a bull delineating in greater detail a natural likeness suggested by the stone surface (Akers *et al.*, 2011). It forms an element in a total rock configuration aligned and oriented as a solstitial marker and the site was clearly involved in sacral rites. Similar rock paintings in northern Africa, perhaps as old as the eighth millennium BCE depict shamans consubstantial with a fungal identity, as well zoomorphic transmogrification into an antlered deer and bees. Some depictions suggest consubstantial anthropomorphisms of *Amanita muscaria*. Rock art of the San people of South Africa, and elsewhere, also indicates probable psychoactive agents for accessing shamanic rapture. The similarity of metaphors with traditions from Classical antiquity and with those documented in the New World suggests that the spirit supposedly resident in the entheogen communicates with the shaman, as is commonly claimed.

Issenheim Altarpiece

Certain works of European art from the Renaissance suggest that a mushroom cult continued in elite societies of Christians. The most defining characteristic of the *Amanita muscaria* is the persistence of its potentiated toxin as a metabolite in urine, perhaps reflected in the ancient tradition of the second birth of Dionysus from the groin of his father. Between 1512 and 1516, Matthias Grünewald painted an altarpiece for the monastic hospital at Issenheim, in Alsace, now displayed in the Unterlinden Museum at Colmar (Ruck *et al.*, 2007). The monastery claimed Saint Anthony of Egypt as patron and it tended patients suffering from the affliction of ergotism named Saint Anthony's fire after the saint. Prominent in its complex of images presented in three layers of unfolding panels is the depiction of the divine Infant's *vase de nuit* or chamber pot, above which is a transparent crystal vessel of ornate Persian design like a monstrance containing the amber fluid of the Baby's urine, above which, the Virgin, in heaven amid a consort of angelic and demonic musicians appears, wearing a crown of flames surrounded by an orange nimbus, as she blesses the sacrament. The risen Christ is depicted in the adjacent panel to the right rising from the tomb, surrounded by the same nimbus, his white legs trailing the white burial shroud and presenting a credible anthropomorphism of the *Amanita muscaria*. At the innermost third level of presentation, which was visible only on the saint's day and for special rituals, two scenes with Saint Anthony, patron of mushrooms-seekers, flank a shrine with wood carvings. On the right, demons torment the saint. A poor deformed man, afflicted with the pustules of the disease, clutches a bible beside a tree trunk that is host for fungi. On the left, the saint is depicted entertaining a visit from the Hermit Paul of Thebes. For their meagre banquet, a Raven descends delivering two bits of Raven's bread, whereas ordinarily the saint was sustained by a single daily piece of the bread from the Raven. Beneath the Raven, a deer approaches, about to graze on some of the mushrooms for which the *Cervidae* are notably fond, including the *Amanita's* metabolite in urine. Another deer rests between Anthony and Paul, engaged in conversation, probably on the subject of their miraculous nourishment in the desert. The motif of the deer hunt in medieval and Renaissance art probably always had the gathering of the mushroom as its referent. Both Saints Hubertus and Eustatius experienced a vision of the Christ suspended between the antlers of a stag while out on the hunt.

Bacchanal of the Andrians

Between the years 1523 and 1526, while in residence with the Duke, Titian painted *The Bacchanal of the Andrians* for Alfonso I d'Este to decorate the antechamber to the bedroom he shared with his second wife, Lucrezia Borgia, daughter of Pope Alexander VI (Heinrich, 1995; Ruck *et al.*, 2007; Ruck *et al.*, 2012). The theme of the antechamber's art was depictions of ancient orgies or revels. The painting is now in the Museum of the Prado in Madrid. There are two levels of reality in the depicted scene, the islanders of the Greek isle of Andros, who held an annual revel to celebrate the arrival of the god Dionysus, at which time the rivers of the island flowed with wine. The other level of reality is the materialization of the god's nude male attendants, scooping up the wine from the river, drinking it, and carting it away. Shockingly nude in the corner of the right foreground reclines a voluptuous female, who is Ariadne, the bride of the god, exposing her genital area. Lucretia may have served as model for Ariadne. Beside her is the god, Dionysus-Bacchus, but incongruously as a child, lifting his shirt to urinate in the river's stream, his penis and her vulva adjacent. The two levels of reality appear unaware of the other's presence, except for two figures. One from the mythical entourage is pouring the liquid from a pitcher into the uplifted saucer held by a woman, unaware of him behind her, as she reclines on the bank of the stream, totally engrossed in conversation with her neighbor. Beside her another from the mythical entourage is looking at a crystal pitcher held aloft by an islander in a group of Andrians dancing about a tree, in whose branches sits a large peacock, emblematic of the changes of color effected through alchemical transmutation, thus identifying the urine from the river's stream as the golden elixir of immortality. The two crystal pitchers mark the nexus where one reality impinges on the other, suggesting that the liquid content is visionary or hallucinatory.

In front of the women in conversation by the riverbank is a piece of musical notation; the music is a perpetual canon or round whose text reads, "He who drinks but once and doesn't drink it again knows not true drinking." The reference is clearly to the child's pee, round and round, which is being poured into her cup and which appears again in the monstrosity of the crystal pitcher. Another of the males from the mythical entourage behind the two conversing women is looking directly at the peeing child and knows full well that it is divine urine that he is scooping from the stream. The source of the river appears personified as a river god in the distant right above the reclining Ariadne. He is a white-bearded man, apparently passed out, the river's fountain issuing from between the legs of his nude body, ostensibly from his genitals as urine. Equally unconscious and in the same pose is the nude Ariadne, he and she probably adding to the urine flowing in the stream. Beside the peeing god is an overturned large stemmed golden chalice, of probably ecclesiastical design, suggesting that the alchemical elixir of transmuted pee is the Eucharist.

The peeing homunculus or little man was a motif in alchemical depictions, releasing his urine within the alembic containing the potion of transcendence, and the alchemists riddled that the so-called stone that conferred the knowledge of philosophers was actually something despicable, common and everyday, tossed out as offal into the streets. Since both Grunewald and Titian were in residence for an extended period as they accomplished their patrons' commission, it is difficult to imagine that the artists had not partaken of the sacrament encoded in their paintings.

Ghent Altarpiece

In 1432, Jan van Eyck completed the Ghent Altarpiece (titled the *Adoration of the Mystic Lamb*) that his brother Hubert had begun but left unfinished upon his death in 1426 as a commission from Duke Philip the Good of Burgundy, to coincide with the birth of the Duke's son from his third wife Isabella of Portugal and the inauguration of the warrior brotherhood of knights called the Order of the Golden Fleece (Ruck and Hoffman, 2012). The Duke was a great enthusiast of alchemy. Here in the outer level of the polyptych altarpiece, the urine appears in a transparent flask catching the light of the sun on a window ledge of the bedchamber where the Virgin, already pregnant, is receiving the news of the Annunciation. The dove of the Annunciation descending above her head was the traditional Flemish design for the ciborium containing the bread of the Eucharist, and the central panel of this outer level of presentation depicts the sacristy chamber where the priest prepared to administer the Communion.

The flask of urine is proof that the Virgin is indeed pregnant. Ancient and medieval doctors studied the

effluents of the body as a clue to the inner workings of the patient's physical condition, and the urine as the most copious was of particular significance. Some doctors, called 'piss prophets,' claimed that they could determine pregnancy from the color of the urine, and there are published color charts that they employed as a guide. The flask of urine was also a metaphor elaborated by Saint Bernard and others to explain how the Virgin could conceive and yet remain *virgo intacta*, with unbroken hymen. It was like a beam of sunlight penetrating the glass of a flask, imparting its color to the liquid, but leaving the vessel intact.

The Altarpiece originally was fitted with a mechanism of clockwork that daily opened the panels of the outer presentation, accompanied with mechanical music, to reveal the inner presentation for the Eucharist. Here the same model who served for the pregnant Virgin is portrayed on the right upper panel as the shockingly nude Eve, already pregnant, and also in the central panel as the Virgin now elevated to her role as the *Regina Coeli*, Queen of Heaven. She is enthroned beside Jesus, now her consort as the Almighty. He is an astonishingly handsome young man, and he is also the same model who served for the portrayal in the upper left panel opposite Eve for the portrait of the equally shockingly nude Adam, about to walk out of his niche to assume his future role as mate of Eve's redemption in the persona of the *Regina Coeli*.

The divine couple sit enthroned beside the Baptist, the original patron of the Church, to witness in the scene below them the marriage feast of the Mystic Lamb. The scene is the Apocalyptic Revelation of John of the stream flowing through the New Jerusalem, when he rescinds the prohibition of the Garden of Eden and invites all to eat freely now of the forbidden fruit of the knowledge of good and evil that will make man like unto God and his angels. The Lamb stands upon an altar in a flowering meadow, surrounded by the *Arma Christi*, the instruments of the Crucifixion. The Lamb's Blood spurts from His body, as the source for an elaborate fountain that is the source of the river. The basin of the fountain contains gemstones and coral. Water passing over magical stones was thought to absorb their potency. The coral was supposedly derived from the blood that dripped from the decapitated Gorgon Medusa, from which sprouted spongy mushrooms that only turned Petrified as coral when immersed in water. In scientific nomenclature coral belongs to the family of the *Gorgonacea* and its name as 'coral' derives from ancient Greek, where it is the diminutive for the *kore* or pubescent girl, probably linking the blood to the menses. The esteem for coral is of the greatest antiquity, traceable back to the Zoroastrian Magi and the Vedic Brahman priests, who endowed it with sacred properties, probably since it was metaphoric for the *haoma* and Soma sacrament. As Petrified, it was the original for the alchemical *lapis philosophorum* or 'stone of the philosophers.' In medieval symbolism, it was known as the *lapis Christi*, the Petrified Blood of Christ.

To the left of the central panel of the Mystic Lamb, the Duke is portrayed amid a troupe of knights as the Soldiers of Christ, approaching the sacred meadow of the fountain river, about to lay claim to sovereignty over the New Jerusalem. Their path is strewn with gemstones and corals. The matching panel opposite on the left depicts Saint Anthony and the Hermit Paul, probably still discussing the miracle of the Raven's bread, as they, too, approach the Mystic Lamb. Anthony carries a rosary of coral beads, and several gemstones lie in his path at the base of the tau-cross he carries as a walking stick, prodding the ground as a mushroom-seeker looking for truffles, which folkloric tradition ever since antiquity considered the Petrified urine of a stag. Anthony was also the patron of pigs, which were employed for scenting out the presence of the underground mushrooms. The sows are drawn to them by the noticeable scent of male urine, androstenol, which the truffles produce. Customarily they are hunted *avec la mouche*, 'with the fly,' as is the phrase, because like the *Amanita muscaria* they attract swarms of flies. Islamic tradition, allegedly going back to Muhammad, claimed that the truffle had an effect on the eyes, which implies alteration of vision.

On the outer presentation, the Baptist is depicted in grisaille as a statue holding the cup of poison to which he was immune, its toxicity indicated by the serpent lifting its head from the vessel. In the inner presentation, the spigot on the fountain is a grotesquerie that is the face of the serpent in the cup of poison. An inscription on the rim of the fountain identifies its water as *Aqua Vitae*, the 'water of life,' which by this date had been already for about a hundred years been labeled as the alchemical distillate.

The Altarpiece identifies the blood of the Lamb pouring over the corals and gemstones as the blood that flowed from the side of Christ, when pierced with the lance of the Roman centurion Longinus, which is depicted among the instruments of the Crucifixion. The Duke actually had a phial of the Petrified Holy Blood, enclosed and sealed within a crystal tube, that was given to his ancestor Sybilla of Anjou on Christmas of 1148 in Jerusalem, a holy relic allegedly discovered by the Knights Templar, and when she touched it she had a vision

of the New Jerusalem, which was going to be the city of Bruges in Flanders. It is preserved in Bourg Square in the city of Bruges, and every Friday up until 1325, and then intermittently thereafter, many witnesses claimed that the dried blood liquefied, sometimes dripping as newly shed blood from the reliquary. By this tradition, the story of the Altarpiece reaches back to Philip's twelfth-century ancestor, Philip of Alsace, the Count of Flanders, and the tale of the Grail commissioned from the poet Chrétien de Troyes.

The Garden of Eden

Wasson continued to suspect that confirmation of his identification of Soma would be found in Christianity. When it came in the form of John Allegro's *Sacred Mushroom and the Cross* (1970), he didn't recognize it, much to Allegro's disappointment. As an amateur scholar, Wasson customarily deferred to the opinion of professional authorities. Allegro, the linguist and scholar of the Dead Sea Scrolls, an academic with impeccable credentials in ancient Classical and Near and Middle Eastern languages, had already published several books; he had read Wasson's writings and appropriately acknowledged them, knew of his Mexican discoveries, and accepted his identification of Soma as the fly-agaric. Wasson, like all Allegro's critics, would have found the linguistic documentation beyond his expertise. He asked a rabbi and a Catholic Monseigneur in his acquaintance their opinion and they assured him that there wasn't a word of truth in it.

The Wondrous Mushroom: Mycolatry in Mesoamerica was the last book that Wasson saw through to publication (Wasson, 1980). By this time, he had become quite convinced that the experience that had occurred with María Sabina was religious in essence. His later work with the Anishinaabeg (Ojibwe) shaman Keewaydinoquay (Peschel) demonstrated how widespread or universal was the role of sacred visionary substances in the origin and practice of religion (Keewaydinoquay, 1984), requiring a new designation devoid of the cultural environment of the psychedelic era. For this, he endorsed entheogen: "'God within us,' those plant substances that, when ingested, give one a divine experience. The new word notably captures the rich cultural resonances evoked by the substances, many of them fungal, over vast areas of the world in proto- and prehistory."

In *Persephone's Quest*, Wasson's final book, published just after his death in 1986, he proclaimed by its subtitle that he had concluded that entheogens were the origin of religion (Wasson *et al.*, 1986). The first chapter was Wasson's final summation. "As I am nearing the end of my days," he began, "I will draw up an account of our mushroom quest." Here he came back to the question of a mushroom cult in Christianity. "I once said that there was no mushroom in the Bible," he wrote. "I was wrong.... I hold that the fruit of the Tree of Knowledge of Good and Evil was Soma, was the *kakuljá*, was *Amanita muscaria*, was the Nameless Mushroom of the English-speaking people."

References

1. Akers BP, Ruiz JF, Piper A and Ruck CAP. A prehistoric mural in Spain depicting neurotropic *Psilocybe* mushrooms? *Economic Botany* 2011; 65(2): 121-128.
2. Bennett C. Cannabis and the soma solution, Trine Day, Waterville., 2007.
3. Bonnefoy Y. Greek and Egyptian mythology, University of Chicago Press, Chicago. 1991. Translated under the direction of Wendy Doniger from the French, *Dictionnaire de mythologies et des religions des sociétés traditionnelles et du monde antique*, 1981, Flammarion, Paris. 1991.
4. Burkert W. Ancient mystery cults. Harvard University Press, Cambridge., 1987.
5. Cooper JH. Etruscan and Lemnian appear to be twigs of the Pelasgian branch of the Indo-European language. *Mankind quarterly* 2000; 40(4): 421-434.
6. Cosmopoulos M. Bronze age Eleusis and the origins of the Eleusinian mysteries, Cambridge University Press, Cambridge., 2015.
7. Fabbro F. Did early Christians use hallucinogenic mushroom? *Archaeological evidence*. 1996.
8. <http://distelrath.tripod.com/fabbro.htm> Accessed date: 4 December 2015.
9. Flattery DS and Schwartz M. The botanical identity of the Indo-Iranian sacred hallucinogen 'Soma' and its legacy in religion, language and Middle Eastern folklore, The University of California Press, Berkeley., 1989
10. Geniusz WM. Our knowledge is not primitive: decolonizing botanical Anishinaabe teachings (Iroquois and their neighbors, Syracuse University Press, Syracuse., 2009.
11. Gershenson DE. Apollo the wolf god, *Journal of Indo-European monograph series*, no. 8, University of Michigan, Institute for the Study of man, Ann Arbor., 1991.
12. Goldblatt H. Notes on the text of Ivan Vysens'kyj's "Epistle to the renegade bishops. *Harvard Ukrainian Studies* 1994; 18 (1-2): 47-75.

13. Grummond N, Thomson de. Etruscan myth, and legend, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia., 2006.
14. Heinrich C. Strange fruit: alchemy, religion, and magical foods, a speculative history. Bloomsbury, London., 1995.
15. Hillman D. The chemical muse: drug use and the roots of Western civilization, St. Martins / Thomas Dunne Books, New York., 2008.
16. Keewaydinoquay (Peschal), with an introduction by Wasson, R.G. The miswedo in Anishinaabeg Life, Stamperia Valdona, Verona. From the hand-corrected master proof of the unpublished printing, of which only five copies exist, sequestered from access in the Wasson Archives, Harvard Library., 1984.
17. Kiotsekoglou S. Stone mushrooms of Thracian megalithic sanctuaries. Ruck, C.A.P., ed., Dionysus in Thrace: ancient entheogenic themes in the mythology and archaeology of Northern Greece, Bulgaria, and Turkey, Regent Press, Berkeley, 2014; pp. 241-256.
18. Klapp E. Raven's bread and other manifestations of fly agaric in Classical and biblical literature. Rush, J.A., ed., Etheogens and the development of culture: the anthropology and neurobiology of ecstatic experience, Atlantic Books, Berkeley, 2013; pp. 333-342.
19. Klöckner A. Getting in contact: concepts of human - divine encounter in Classical Greek art. Bremmer J.N., and Erskine, A., eds., The gods of ancient Greece: identities and transformations, Edinburgh University Press, Edinburgh, 2010; pp. 106-125.
20. Kramrisch S. The mahavira vessel and the plant putika.' Journal of the American Oriental Society 1975; 95 (2): 222-235.
21. Kurtz D and Boardman J. Greek burial customs, Thames and Hudson, London., 1971.
22. Lehmann K. Samothrace: a guide to the excavations and the Museum. Thessaloniki: Institute of Fine Arts, New York University, Thessaloniki., 1954.
23. Levi-Strauss C. Tristes tropiques, Librairie Plon, Paris., 1955.
24. Marchand M and Boudier M. 'La fresque de Plaincourault (Indre). Bulletin Société Mycologique Française 1911; 27: 31-33.
25. Markov V. The ancient Thracian megalithic sanctuary 'Markov Kamak' at Tsarev Peak in Rila Mountain: semantic and functional analysis. Geoarchaeology and archaeomineralogy. Publishing House 'St. Ivan Rilski,' 2008; pp. 177-179.
26. Markov V., Archaic mushroom monuments and Bulgarian folkloric motifs. Ruck, C.A.P., ed., Dionysus in Thrace: ancient entheogenic themes in the mythology and archaeology of Northern Greece, Bulgaria, and Turkey, Regent Press, Berkeley, 2014; pp. 183-198.
27. Maurizio L. Classical mythology in context, Oxford University Press, Oxford., 2016.
28. Nichols BM. The fly-agaric and early Scandinavian religion. Eleusis: Journal of Psychoactive Plants and Compounds, new series 2000; 4: 87-118.
29. Petridou G., Blessed is he who has seen': the power of ritual viewing and ritual framing in Eleusis,' Helios 2013; 40(1- 2): 309-341.
30. Piper A. The milk of the goat Heidrun: an investigation into the sacramental use of psychoactive milk and meat. Rush, J.A., ed., Etheogens and the development of culture: the anthropology and neurobiology of ecstatic experience, Atlantic Books, Berkeley, 2013; pp. 211-278.
31. Ritter M. Ancient wine cellar unearthed in Israel shows Canaanites enjoyed a sophisticated drink,' New York: AP..2013.http://www.huffingtonpost.com/2013/11/22/ancient-wine-cellar-israel_n_4323848.html [3 December 2015].
32. Ruck CAP. On the sacred names of Iamos and Ion: ethnobotanical referents in the hero's parentage. Classical Journal 1976; 71(3): 235-252.
33. Ruck CAP., Documentation. Wasson, R.G., Hofmann, A., and Ruck, C.A.P., The road to Eleusis: unveiling the secret of the mysteries, Harcourt Brace Jovanovich, New York.1978. Reprint, Hermes Press, Los Angeles, 1998. Reprint, Atlantic Books, Berkeley, 1978; pp. 85-136.
34. Ruck CAP., Mushrooms and philosophers. Journal of Ethnopharmacology 1981; 4: 179-205.
35. Ruck CAP. Sacred mushrooms of the goddess: secrets of Eleusis, Berkeley: Ronin Publishing, Berkeley., 2006.
36. Ruck CAP. Fungus redivivus: new light on the mushroom controversy. Allegro, J. Sacred mushroom and the cross: a study of the nature and origins of Christianity within the fertility cults of the ancient Near East, Hodder and Stoughton, London, 1970. Reprint, Gnostic Media Research and Publishing, Los Angeles, 2010; pp. 351-381.
37. Ruck CAP. The great god Sabazios and the crab dance in Athens. The stone mushrooms of Thrace, EKATAIOS, Alexandroupoli, 2012; pp. 193-220.
38. Ruck CAP. The great gods of Samothrace and the cult of the little people. Regent Press, Berkeley. 2015a
39. Ruck CAP. The son conceived in Drunkenness: magical plants in the world of the Greek hero. Nemi / Pen and Anvil Press, Boston., 2015b.
40. Ruck CAP and Hoffman A. Etheogens, myth, and human consciousness, Ronin Publishing, Berkeley., 2013.
41. Ruck CAP and Hoffman MA. The effluents of deity: alchemy and psychoactive sacraments in medieval and renaissance art, Carolina Academic Press, Durham., 2012.
42. Ruck CAP and Lerner R. Virgil's edible tables. Rush, J.A., ed., Etheogens and the development of culture: the anthropology and neurobiology of ecstatic experience, Atlantic Books, Berkeley, 2013; pp. 387-450.
43. Ruck CAP., ed., Dionysus in Thrace: ancient entheogenic themes in the mythology and archaeology of Northern Greece, Bulgaria, and Turkey. Regent Press, Berkeley., 2014.
44. Ruck CAP, Hoffman MA and González Celdrán JA. Mushrooms, myth, and Mithras: the drug cult that civilized Europe. City Lights Books San Francisco., 2014.
45. Ruck CAP, Staples BD, González Celdán J and Hoffman MA. The hidden world: survival of pagan shamanic themes in European fairytales. Carolina Academic Press, Durham., 2007.
46. Ruck CAP, Staples D and Heinrich C. The apples of Apollo: pagan and Christian Mysteries of the Eucharist. Carolina Academic Press, Durham., 2001.
47. Ruck CAP. The offering from the Hyperboreans. Journal of Ethnopharmacology 1983; 8: 177-207.
48. Samorini G. Mushroom effigies in world archaeology: from rock art to mushroom-stones. The stone mushrooms of Thrace, EKATAIOS, Alexandroupoli, 2012; pp. 16-44.

49. Sarianidi V. Necropolis of Gonur. Kapon Editions, Athens., 2007.
50. Spess DL. Soma: the divine hallucinogen. Inner Traditions / Bear and Co, Rochester., 2000.
51. Toporov VN. On the semiotics of mythological conceptions about mushrooms. *Semiotica* 1985; 53(4): 295-357.
52. Waites M. The meaning of the 'dokana'. *American Journal of Archaeology* 1995; 23(1): 1-18.
53. Wasson RG. Soma: divine mushroom of immortality. Harcourt Brace Jovanovich, New York., 1968.
54. Wasson RG. The wondrous mushroom: mycolatry in Mesoamerica. McGraw-Hill Company, New York., 1980.
55. Wasson RG. Persephone's quest,' Wasson, R. G., Kramrisch, S., Ott, J., and Ruck, C.A.P., Persephone's quest: entheogens and the origins of religion, Yale University Press, New Haven, 1986; pp. 17-81.
56. Wasson RG and Doniger (O'Flaherty) W. The last meal of the Buddha. *Journal of the American Oriental Society* 1982; 102(4): 591-603.
57. Wasson RG, Hofmann A and Ruck CAP. The road to Eleusis: unveiling the secret of the mysteries. Harcourt Brace Jovanovich, New York. Reprint. Hermes Press, Los Angeles, 1998. Reprint, Atlantic Books, Berkeley, 2008.
58. Wasson VP and Wasson RG. Mushrooms, Russia, and history, Pantheon Books, New York., 1957.
59. Webster P, Perrine D and Ruck CAP. 'Mixing the kykeon'. *Eleusis: Journal of Psychoactive Plants and Compounds, new series* 2000; 4: 55-86.