

CHAPTER 2

THE MAGIC AND CEREMONIAL USE OF CANNABIS IN THE ANCIENT WORLD

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Cannabis has been suggested as being humanity's oldest agricultural crop, and by all estimations, our relationship with this plant is considerably ancient. Undoubtedly, our use of this versatile plant, for fiber, food, and medicine, goes far beyond the agricultural age and into the period of the hunter gatherer, for if it was not a sought-after commodity, there would have been no desire to control and farm it.

Although finds of hemp cloth fiber can be found dating at about 10,000 BC, archaeological finds of tools used in the decordation of hemp date back to about 35,000 BC (Barber, 1991). We can be sure in the millennia that past between that time period and the development of the religious philosophy of the ancient world, man had become aware of both the medicinal and psychoactive properties of the plant, and both qualities would no doubt have been considered "magical" in their effects to primitive minds, thus it is not surprising that some of the most ancient accounts of cannabis, in both archeological finds and ancient textual references, occur in the formative genesis period of religious history, at the transition point when shamanism gave way to organized religion, where eventually it was used somewhat but not completely declined. As this discussion shall show, this ritual use of cannabis was considerably widespread throughout the ancient world and played a pivotal role in the early period of a number of well-known and, in some cases, still existing religious traditions; these include Hinduism, Taoism, Zoroastrianism, Judaism, Christianity, Buddhism, as well as indications in a wide number of the no longer practiced traditions and cults of the ancient world.

In regards to psychoactive use, the first archaeological evidence dates from about 3,500 BCE, in what is now modern Romania, where tripod ceramic bowls were used to burn cannabis flowers in a cave. Although we can be sure that the plants use for such purposes long predated this, preserved identifiable plant matter from such ancient sites are rare, so our knowledge on this is limited. This oldest archaeological evidence comes from a gravesite of a group known as the Proto-Indo-Europeans, the Kurgans, who occupied what is now Romania 5,500 years ago. The "clay vessel with carbonized seeds" found at the site provides the "earliest evidence for the burning of cannabis" (Anthony, 2008). From remnants of the charred hemp seeds, we can see that the combustible (and psychoactive) parts of the plant—namely, flowers and leaves—had been consumed and the carbonized hard shell-like residue of the seeds left behind. This use is tied to a Proto-Indo-European group known as the Serezeni Stog who are believed to have been the first riders of horses, which they were able to capture and tame with the advent of hemp ropes. This use of the horse turned them into highly nomadic people and their descendants, known as Indo-Europeans, adopted this, along with cannabis, in both name, "kanna," and ritual uses, and through this high mobility, they spread the use of cannabis throughout the ancient world, and this can be traced in identifying the etymological origins of various names of cannabis in a variety of far-reaching languages.

This term left traces through the vernacular "an" seen in various terms for cannabis, such as the Indian "bhang," the French "chanvre," the Dutch "canvas," the German "hanf," Greek "cannabis," Sanskrit "sanna," Persian "bhanga," and "kanas" in Keltic and Breton. All of these languages developed from a common Indo-European language, and became different dialects through separation and time. The original term for cannabis "kanna" is thought to be a loan word from ancient Finno-Ugrian and Turkic stocks of north central Eurasia. That these terms are manifest dialectic equivalents would constitute the solidest possible evidence for the antiquity of the word, as the undivided Neolithic Indo-Europeans began to migrate and to break up dialectically in the early Bronze Age spreading prehistorically all the way from Ireland to Ceylon. The relationships between these names establish their common origins in antiquity and the widespread use of cannabis. As shall also be shown, dialectic equivalents of these terms also filtered into other ancient languages, such as Assyrian and Hebrew.

Besides the considerably ancient find of the "smoking cup" in Romania mentioned above, "Hemp has . . . been recovered from . . . a Yamma burial at Gurbanesti (Moldova) where traces were found in a 'censer' (a shallow footed bowl believed to have been used in the burning of some aromatic substance). It has been found in a similar context from an early bronze age burial in the north Caucasus. . . . Ceramics were more elaborate than those of the Yamma

culture and included, especially in female burials, low footed vessels interpreted as 'censers,' presumed to be used in rituals involving some narcotic substance such as hemp" (Mallory & Adams, 1997). "It seems, therefore, that the practice of burning cannabis as a narcotic is a tradition which goes back in this area some five or six thousand years and was the focus of the social and religious rituals of the pastoral peoples of central Eurasia in prehistoric and early historic times" (Sherratt, 1995a). "These 'censers' often highly decorated with 'sunburst' motifs, are widespread across the steppe region in the third millennium B.C. (extending at least from the Dnieper to the Yenisei) and may be part of a ritual complex. The censers also diffuse westward at this time in Romania, Hungary and further along the Danube" (Mallory & Adams, 1997).

Sherratt suggested that the cannabis burning braziers eventually went to the wayside and were replaced by a beverage, although he believes that cannabis use continued through this cultural shift. The "disappearance of ceramic braziers in northern and western Europe" was followed "by the appearance . . . of prominent forms of pottery drinking vessels. Corded-ware beakers and early bell-beakers are ornamented with impressions of twisted cord: if these are hemp fibres, then the decoration may indicate that their contents were connected with cannabis" (Sherratt, 1995a). A view shared by other researchers: "As cannabis can also be infused, i.e., served as a component in a drink, it has also been suggested that the spread of cord-(hemp?) decorated pottery from the steppe westward may also have been part of this same complex" (Mallory & Adams, 1997). Sherratt's educated speculation was that the steppe people were so taken with their cannabis-infused beverages and braziers that they indicated its importance by making impressions of the plant on the clay vessels that contained them. Further evidence of cannabis surviving in clay fragments have also been found in the vicinity from the same time period, so this is a very realistic bit of speculation: "clay shard showing impressions of what are thought to be *Cannabis* seeds from around 3000 BC were discovered during excavations at a Linearbandkeramik culture site north of the Black Sea" (Sneader, 2005). Sherratt believes that the cord impressions were a method of symbolizing the contents of the container on the container itself, and he compares this to the similar way Late Bronze Age Cypriot opium jugs were manufactured in the shape of poppy capsules. In both cases, the vessels overtly advertised their contents.

It should be noted that the "Cord Ware" culture has always been considered important in locating evidence of Indo-European origins. The Corded Ware culture that seems to have dominated middle Europe from about 2900 BCE to 2400 BCE was an enormous European archaeological horizon that began in the Stone Age and continued on into the Bronze Age. It encompassed most of continental northern Europe from the Rhine River on

the west to the Volga River, including most of modern-day Germany, the Netherlands, Denmark, Poland, Lithuania, Latvia, Estonia, Belarus, Czech Republic, Slovakia, northwestern Romania, northern Ukraine, and the European part of Russia, as well as coastal Norway and the southern portions of Sweden and Finland.

Much of the spread of cannabis in this area and throughout the ancient world has been attributed to nomadic Indo-European groups now known under the collective title of the Scythians. Cannabis was an integral part of the Scythian cult of the dead wherein homage was paid to the memory of their departed leaders. In a famous passage written in about 450 BC, Herodotus describes the funeral rites that took place when a king died among the Scythians. After burial, he recorded, the Scythians would purify themselves by setting up small tepee-like structures covered by rugs that they would enter to inhale the fumes of hemp seeds (and the resinous flower calyxes surrounding the seeds) thrown onto red-hot stones.

The burial completed, the Scyths cleanse themselves in the following manner. They soap their heads and wash their hair, and then to cleanse their bodies they do as follows: they set up three sticks leaning together which they cover with woolen felts, and in the circular shelter created as best they can they put stones heated in a fire into a vessel set within a shelter. . . . In Scythia they grow hemp. . . . And then the Scyths take some of its seeds, creep under the felt and scatter the seeds over the hot stones, which gives off greater clouds of steam than in any Greek steam bath. The Scyths delighted by the steam, are loudly exultant. (Herodotus in Rawlinson, 1885)

Current evidence indicates the Scythian use of cannabis was not limited to funerary rituals, and it is also most likely the seeds described by Herodotus were seeded buds, as in the early 20th-century charred carbonized seeds left over from the burnt buds were found in the Scythian tombs discovered in Parzyk, by the Russian archaeologist Professor S. I. Rudenko (Rudenko, 1970).

George Widengren noted that "this purification had no mundane meaning, rather it corresponds to a shamanistic ritual, by which the shaman escorts the dead soul to the underworld. In fact the shaman is not mentioned in Herodotus's [*sic*] description, but all the crucial details recur otherwise in the Scythian purification: cult of the dead, use of hemp, 'baths' and howling together constitute a complex ritual whose aim is ecstasy" (Widengren, 1965).

Shamanistic ecstasy is described as "one in which the spirit leaves the physical body" and cannabis was utilized to induce this state on the Thracian plains almost 3,000 years ago. Closely related to Scythian tribes, the Thracians were a well-organized group of horseman and hunters who held "a belief in the soul and a hereafter comparable to the Christian heaven. . . .

Their shamans, known as Kapnobatai, used hemp smoke to induce visions and oracular trances" (Emboden, 1972). Noted religious scholar Mircea Eliade also referred to the use of hemp among the Thracians, stating that the Kapnobatai were "dancers and 'shamans' who used the smoke of hemp to bring ecstatic trances" (Eliade, 1982).

Similarities in language, art, technology, and cannabis use indicate an ancient connection or ancestry between the Scyths and a variety of other well-known European groups. The German ethnobotanist Christian Ratsch, who has done extensive work digging up ancient European cannabis references, has noted among other things that in ancient Germanic culture, cannabis was used in honor of the Goddess Freya as both a ritual inebriant and an aphrodisiac and that the harvesting of the plant was connected with an erotic high festival. "Hemp, sacred to her, was used to promote desire, fertility and health in humans" (Ratsch, 2001). It was believed that Freya lived as a fertile force in the plant's feminine flowers and by ingesting them one became influenced by this divine force (Ratsch, 2001, 2005).

This view is supported by the archaeological discovery of cannabis in a prehistoric German tomb.

Remnants of hemp dating from prehistoric times were discovered in 1896 in northern Europe when the German archaeologist, Hermann Busse opened a tomb containing a funerary urn at Wilmersdorf (Brandenburg). The vessel in question contained sand in which were mixed remnants of plants. It dated from the 5th century BC. The botanist, Ludwig Wittmaack (1839–1929), was able to find among this plant debris fragments of the seed and pericarp of *Cannabis sativa* L. At the session of the Berlin Society for Anthropology, Ethnology and Prehistory on May 15, 1897, Busse presented a report on his discovery and drew the conclusion that hemp had already been known in northern Europe in prehistoric times . . . one must agree with C. Hartwich that hemp was already employed in northern Europe at the same time that it was by the Chinese and the Scythians for food and pleasure. (Reininger, 1941)

The authors of Encyclopedia of Indo-European Culture likewise note that "hemp has . . . been discovered in an iron age contexts in western Europe, e.g. a Hallstatt burial, presumably Celtic, at Hochdorf in Germany" (Mallory & Adams, 1997).

THE ANCIENT MID-EAST HEBREW USE

A cultural connection between the Scythians and Hebrews, including trade, has long been suggested, and the Polish anthropologist Sula Benet felt that cannabis was an important item of trade between the two cultures.

Since the history of cannabis has been tied to the history of the Scythians, it is of interest to establish their appearance in the Near East. . . . The Scythians participated in both trade and wars alongside the ancient Semites for at least one millennium before Herodotus encountered them in the fifth century B.C. . . . There is evidence of the presence of the Scythians in Palestine. The city known as Beizan in modern times was originally called Bethshan and later renamed Scythopolis by the Greeks during the Hellenistic period, since many Scythians settled there during the great invasion of Palestine in the seventh-century B.C.

The importance of the geographical position of Palestine cannot be overlooked when considering the trade routes through which caravans moved, laden with goods and precious "spices." Palestine was situated along the two most vital trade routes of the ancient world. One was between Egypt and Asia and the other ran west from Arabia to the coastal plain, from there branching off to Egypt to Syria. (Benet, 1975)

Benet believed that the word "kaneh-bosm," which appears in the original Hebrew texts contained in the Old Testament canon, was mistranslated as *calamus*, a common marsh plant with little monetary value that does not have the qualities or value ascribed to *kaneh* or *kaneh-bosm*, which she argued was cannabis. However, it should be noted that *calamus* itself is said to contain some psychoactive alkaloids and its use for these purposes has been reported (Schultes & Hoffman, 1979; Ott, 1993). Benet noted that in later references, *kaneh* is described as a fiber plant from which shirts were made, while *calamus* is not a fiber plant and it is a common marsh root in the Mid-East, where as the references to *kaneh-bosm* indicate it was a precious item of trade (Ezekiel 27:19) and is described as coming from a foreign land (Jeremiah 6:20). As an item of trade, cannabis came to the Hebrews with a foreign name and the Hebrew terms "*kaneh*" and "*kaneh-bosm*," translated in modern English bibles variously as "*calamus*," "*cane*," "*fragrant cane*," and "*sweet cane*," can be seen to be an adaption of the Indo-European word name for cannabis "*KannaB*," likely through Scythian traders, who as noted burnt the plant in enclosed tents to capture its fumes.

Also worth noting is the cognately similar Assyrian word used in the same time period for cannabis "*qunubu*" was ascribed as a key ingredient of Assyrian "sacred rites" in ancient inscriptions, and references specifically identify the use of cannabis in temple incenses. The error in translation occurred in the oldest Greek translation of the Hebrew Torah, the Septuagint in the third century BC, and was repeated in the many translations that followed such as the Vulgate (often translators had little understanding of plant botany and identification). "This conclusion has since been affirmed by other scholars" (Ruck et al., 2001). The Old Testament references identify

the plants copious use in the holy anointing oil, which was used topically on the skin as well as poured over the temple incense (Exodus 30:23) and was burned in the Tent of the Meeting, where Moses talked to the Lord in a pillar of smoke over the altar. Later Old Testament references indicate this practice fell out of favor as Judaism became an organized religion controlled by a ruling class and the practice became associated with paganism and polytheism, particularly associated with the Canaanite goddess Asherah, the sometimes wife of Yahweh, who was known as the Queen of Heaven and whose worshippers burnt cannabis resins as well as applied it topically (Emboden, 1972). The Old Testament prophet Jeremiah rallied against this use (Jeremiah 6:20; Jeremiah 44).

The recipe for the holy oil is given in Exodus 30:23 and as one shekel equals approximately 16.37 grams, this means that the tetrahydrocannabinol (THC; the principal psychoactive constituent (or cannabinoid) of the cannabis plant) of over 9 pounds of flowering cannabis tops were extracted into a hind, about 6.5 liters of oil. The entheogenic effects of such a solution, even when applied topically, seems likely. Health Canada has done scientific tests that show transdermal absorption of THC can take place. The skin is the biggest organ of the body, so of course considerably more cannabis is needed to be effective this way, much more than when ingested or smoked. The people who used the holy oil literally drenched themselves in it. Based upon a 25 mg/g oil, Health Canada found skin penetration of THC (33%). "The high concentration of THC outside the skin encourages penetration, which is a function of the difference between outside and inside (where the concentration is essentially zero)" (Geiwitz, 2001). Cannabinoid expert Dr. Ethan Russo has suggested that the other ingredients listed in the Exodus recipe, myrrh and cinnamon, may have actually increased blood flow to the skin, potentiating any transdermal effect. Cross-cultural references to such topical preparations of cannabis have been identified (Bennett & McQueen, 2001; Bennett, 2006). Closer to Moses's own time, ancient Assyrian inscriptions indicate that a similar preparation was in use for identical purposes: An Assyrian medical tablet from the Louvre collection (AO 7760) translates as "So that god of man and man should be in good rapport:—with hellebore, cannabis and lupine you will rub him" (Russo, 2005).

Contemporary to this Hebrew use are a number of Assyrian references to cannabis under the name "kunubu," also rendered "qunubu," which have been identified as references to cannabis. In our own time, numerous scholars have come to acknowledge *qunubu* as an early reference to cannabis. "It is said that the Assyrians used hemp as incense in the seventh and eighth century before Christ and called it 'Qunubu'" (Schultes & Hoffman, 1979). "[T]he Assyrians knew of hemp . . . and . . . called it 'Qunubu' . . . a term apparently borrowed from an old East-Iranian word 'Konaba,' the same as the Scythian

name Kánnabis (cannabis), which later designation the plant bears at the present day" (Lewin, 1931).

Referring to the difficulties in deciphering plant identification from the vague and long forgotten names found in the ancient texts, respected Assyriologist Erica Reiner reveals an interesting connection with the ancient world goddess and "qunnabu" that few other Assyriologists have noted:

Sometimes the etymology of the name is transparent, While "sunflower" (u. UTU *sammi samas*) probably describes any heliotrope, that is a flower that always looks at the sun: "the flower of Samas that faces the setting sun," other names composed with the name of a god or goddess are more suggestive. We do not know to what botanical species for example the herb called "Ninurta's aromatic" (Summerian *sim. Ninurta*, equated in Akkadian with *nikiptu*) refers, both varieties of which, masculine and feminine, are mentioned in recipes; however, the name of the herb called Sim. Ishara "aromatic of the Goddess Ishtar," which is equated with the Akkadian *qun-nabu*, "cannabis," may indeed conjure up an aphrodisiac through the association with Ishara, goddess of love, and also calls to mind the plant called *ki.na Istar*. (Reiner, 1995b)

This is a valuable piece of information when trying to understand the ritual practices and beliefs of ancient Mesopotamia, and even the wider Mid-East, especially regarding the considerably widespread worship of goddesses such as Ishtar, Ishara, and Ninurta.

[T]he multifaceted goddess Ishara. She does not appear to be a native Mesopotamian deity, but was worshipped by many people throughout the ancient Near East, which has led to a confusing array of attributions—she is known as a great goddess to the Hurrians, the wife of Dagon among the West Semites, and to the Akkadians she was a goddess of love with close affinities to Istar, whose sacred plant cannabis (qunnabu) was known as the aromatic of Ishara . . . from her widespread worship she is also known as the queen of the inhabited world. (White, 2008)

This association was likely widespread and considerably ancient, as the continuous worship of the goddess, under a variety of evolving and related names and images, can be traced back far into the Stone Age. William Emboden Jr. has also pointed to the use of cannabis amongst the cult of the related popular Near Eastern goddess, Ashera, who we discussed earlier in relation to her association with Hebraic cannabis use and its later prohibition:

There is a classic Greek term, *cannabeizen*, which means to smoke Cannabis. *Cannabeizen* frequently took the form of inhaling vapors from an

incense burner in which these resins were mixed with other resins, such as myrrh, balsam, frankincense, and perfumes; this is the manner of the shamanistic Ashera priestesses of pre-reformation Jerusalem, who anointed their skins with the mixture as well as burned it. (Emboden, 1972)

Recipes for cannabis, qunubu, and incense, regarded as copies of much older versions, were found in the cuneiform library of the legendary Assyrian king Assurbanipal (b. 685–ca. 627 BC, reigned 669–ca. 631 BC). Cannabis was not only sifted for incense like modern hashish, but the active properties were also extracted into oils. “Translating ‘Letters and Contracts, no.162’ (Keiser, 1921), *qu-un-na-pu* is noted among a list of spices (Scheil, 1921) (p. 13), and would be translated from French (EBR), ‘(qunnapu): oil of hemp; hashish’” (Russo, 2005).

Records from the time of Assurbanipal’s father Esarhaddon (reigned 681–669 BC) give clear evidence of the importance of such substances in Mesopotamia, as cannabis, “qunubu,” is listed as one of the main ingredients of the paramount “Sacred Rites.” In a letter written in 680 BC to the mother of the Assyrian king, Esarhaddon, reference is made to *qu-nu-bu*. In response to Esarhaddon’s mother’s question as to “What is used in the sacred rites,” a high priest named Neralsharrani responded that “the main items . . . for the rites are fine oil, water, honey, odorous plants (and) hemp [*qunubu*].”

Curiously, few Assyriologists discuss the qunubu references in the ancient cuneiform tablets, and when they do, it is usually just in a passing reference. Until serious research is done explaining such passages in the context of the ancient documents in which they originally appear, their full implications will not be understood.

CHINA

Interestingly, plaid wearing Indo-European cannabis using groups made it all the way into ancient China, via the Gushi culture, who are believed to have lived in the area from about 2000 to 400 BCE. Astoundingly still green cannabis and preserved seeds have been found at two Gushi sites that date back to more than 2,700 years. However, the evidence does not indicate the Indo-Europeans brought Cannabis to Asia, as archeological evidence documents use of hemp in the area dating back at least 10,000 years.

However, it seems unlikely that Indo-Europeans brought cannabis to China, as the role of cannabis in Asia goes back many millennia. Thought by some botanists to be the original home of undomesticated cannabis, in Asia, hemp use dates back far into the Stone Age, with hemp fiber imprints found in pottery shards in Taiwan, just off the coast of mainland China, that were over 10,000 years old. Alongside these shards were found long rod-shaped tools, similar to those used in mainland China in later times to decord hemp.

As well, indicating its use and popularity throughout the intervening millennia, the famous terracotta warriors were equipped with hemp-soled shoes before their long sojourn into *Terra-firma*. As such it is not surprising the Chinese were amongst the first people to discover both the medicinal and magical properties of the plant with a history of use in these cases, along with its use as a food, fiber, and oil source for lighting and paints, going back thousands of years.

It is generally accepted that *Cannabis sativa* L. was first cultivated in China around 4500 BC when its seed served as a grain crop. Soon after its decaying stems became the source for making hemp fibre for making clothes, ropes, and fishing nets. However, reports of early hemp use in China are open to question either because of inadequate fiber remains or because they relate to impressions on pottery and other objects. . . . Such cord impressions have been found on material from 4000 to 3000 BC unearthed in Taiwan and also similarly dated pots found in Henan Province, eastern China, at an archeological site of the Yang Shao culture, the first civilization to manufacture pottery. (Sneader, 2005)

Archaeologist Andrew Sherratt saw a similar indication of cannabis use indicated in the cord impressed pottery of ancient China, stating "that the early use of cord-impressed pottery in China the so called Sheng-wen horizon—was associated with an early use of hemp and an appreciation (explicit in the early historical records) of its narcotic properties" (Sherratt, 1997). In relation to this comparison, it is interesting to note recent discoveries in China document contact with Indo-European culture began considerably earlier than previously believed. Thus, it has been suggested that "Cannabis, or marijuana, probably originating north of South Siberia, was a key trade item and part of the religio-shamanic complex in the Mesolithic period spreading from Romania to China prior to the end of the Stone Age" (Sinclair, 2007).

As professor of botany Hui-Lin Li, an expert on the history of cannabis in China, notes, "The evidence . . . suggests that the medicinal use of the hemp plant was widely known to the Neolithic (Stone Age) peoples of north-eastern Asia and shamanism was especially widespread in this northern area and also in China, and cannabis played an important part in its ritual" (1975). Likewise, expert on Chinese history, Joseph Needham has also noted, "the hallucinogenic properties of hemp were common knowledge in Chinese medical and Taoist circles for two millennia or more" (1974).

The Chinese glyph for hemp, *Ma*, is usually described as a depiction of two harvested hemp plants hanging to dry in a shed. Generally, this has been regarded as representing the use of cannabis for fiber, but contrarily, like most

cultures, the Chinese retted their fiber hemp in fields or in ponds, soaking the stiff stalks of the plant in order to break down the cellulose and allow the long fibers of the stalk to break free more easily. However, when psychoactive effects are the goal, hanging to dry is the more common cross-cultural method used with cannabis. Professor Li, in his extensively researched essay *The Origin and Use of Cannabis in Eastern Asia: Their Linguistic-Cultural Implications* (1975), notes a double meaning for *ma* (*hemp*): the first, "numerous or chaotic . . . derived from the nature of the plant's fibres. The second connotation was one of numbness or senselessness, apparently derived from the properties of the fruits and leaves which were used as infusions for medicinal purposes." This double connotation has been noted by other scholars; in her essay "Religious and Medicinal Uses of Cannabis in China, India and Tibet," Mia Touw notes:

There may . . . be some etymological evidence to support the idea that the Central Asians were the first to learn about the biodynamic potentialities of cannabis. Of the various Chinese words for hemp, *ta-ma* (great hemp), *huo-ma*, *huang-ma*, *ban-ma* (Chinese hemp), it was *hu-ma*, or fiery hemp (as the meaning has been construed by some etymologists), which also meant Scythian hemp (Stuart 1911) and this latter kind was held to be especially potent. (Touw, 1981)

In regard to "Scythian hemp," this may be a reference to the Indo-European Gushi culture, referred to above, and to which we shall return to after a discussion of indigenous Han Chinese use. In the ancient world, medicine and spirituality had little separation, and often occurred in combination. Ancient Chinese shaman are said to have tapped hemp stalks with the image of a serpent engraved around them, on the beds of the ill, and this was likely a symbolic representation of what they had learned in ancient China about the medical properties of cannabis.

The earliest reference to the use of marijuana as a medicine is believed to have occurred sometime around 2,800 BCE (although this date may be considerably contentious), in the medical compendium, the *Pen Ts'ao* of the legendary Chinese Emperor Shen-Nung, where it was prescribed for a number of maladies. From the time of Shen-Nung onward, Chinese physicians continued to prescribe marijuana, and as they became more familiar with the effects of the plant, new discoveries were made about its properties, such as that made in AD 200, by the early and well-known Chinese surgeon, Hua T'o, who with the aid of cannabis-infused wine known as *ma-yo* used as an anesthesia is reputed to have performed complicated operations such as "organ grafts, resectioning of intestines, laparotomies (incisions into the loin), and thoracotomies (incisions into the chest)" (Abel, 1980).

Throughout the ancient world, medicine held all sorts of magical connotations in people's minds; thus not surprisingly, "The Chinese pharmacopeia Rh-Ya, compiled in the 15th century B.C. contains the earliest reference to *Cannabis* for shamanistic purposes" (Langenheim, 2003). In reference to shamanism, it is important to note that China's ancient use of cannabis flowers and leaves was not limited to medicine: "In ancient China . . . medicine had its origin in magic. Medicine men were practicing magicians" (Li, 1975). This had been a long-standing relation as Emperor Shen-Nung stated that beyond medical use, cannabis: "If taken over a long term, it makes on communicate with spirits and lightens one's body. In these early periods, use of cannabis as an hallucinogen was undoubtedly associated with Chinese shamanism" (Schultes & Hoffman, 1992).

Needham also reports that Taoists mystics were alleged to add "hallucinogenic smokes to their incense burners. . . . The addition of hemp (*ta-ma*, *huo-ma*, *Cannabis sativa* = *indica*) to the contents of incense-burners is clearly stated in one Taoist collection, *Wu Shang Pi Tao* (Essentials of the Matchless Books), which must place it before + 570" (1974). As he explains, cannabis was one of the establishing factors of Taoist Philosophy:

The chain of events which led to the establishment of Mao Shan . . . as the first major permanent centre of Taoist practice began in +349 or slightly earlier with visitations by immortals to a young man named Yang His . . . in a series of visions, there appeared to Yang a veritable pantheon of celestial functionaries, including the lady Wei . . . and the . . . Mao [Brothers]. . . . In the course of these interviews, aided almost certainly by cannabis, Yang took down in writing a number of sacred texts which the immortals assured him were current in their own supernal realm as well as oral elucidations and answers to Yang's queries about various aspects of the unseen world. He treasured and disseminated these scriptures as the basis for a new Taoist faith more elevated than the "vulgar" sects of his time. (Needham, 1976)

Hakim Bey and Abel Zug also note that in "the early Taoist tradition of the Mao Shan, or 'Supreme Clarity' school, a great many shamanic 'survivals' can be traced, among them the intriguing fact that the Mao Shan revelations were supposed to have taken place under the influence of a 'hemp laced incense'" (2004).

Moreover, Taoism has the honor of being the only religion (as far as I know) to personify Cannabis as a deity. In the T'ang period there existed a cult of Ma Ku, or "Miss Hemp." It was centered at Mt T'ien T'ai, at a place called the precipice of Miss hemp; a statue of her stood there in Sung

times. . . . Ma Ku was depicted as a beautiful maiden of the Taoist "grotto fairy" type, but with a bird's claws instead of feet. . . . In T'ang poetry she is often associated with important motifs, connected to Mao Shan meditation techniques, constellated around the imagery of time distortion. (Bey et al., 2004)

Ma Ku, literally "Hemp Lady," was a Taoist "immortal," who had strong connections with the "elixir of life," bringing back to mind that cannabis was deemed one of the superior elixirs of immortality by Shen Nung millennia prior to this and it would seem to have enjoyed this reputation in the intervening centuries. "Taoist dreamed of ascending to heaven after so many years of asceticism and by taking an elixir of life concocted from various rare herbs" (Suzuki, 1961).

Something might . . . be gained by pursuing the mythological connection with the hemp Damsel, Ma Ku, goddess of the slopes of Thai Shan, where the plant was supposed to be gathered on the seventh day of the seventh month, a day of séance and banquets in Taoist communities. (Needham, 1974)

Contemporary to this indigenous Han use, we have evidence of this recently discovered Indo-European culture in China, the Gushi, and this comes with the finest preserved samples of ancient cannabis known. Contact between the two cultures is now known, and as shall be discussed, this relationship, and its linguistic offshoots, may have had some fascinating influences on a variety of other more well-known cultures and religious groups. The Gushi culture is believed to have lived in China from about 2,000 BCE to 400 BCE.

An archaeological find in Xinjiang, China, that included both remnants of cannabis and a mummified Caucasian body have not only radically altered what we know about the history of cannabis, but also have forever changed long-standing beliefs about the movements and communications of whole cultures in the ancient world. In Xinjiang, archaeologists found a sack of marijuana leaves buried alongside the mummified remains of a middle-age man, as well as a mortar and pestle that was used for grinding the plant matter. Additional finds of bundles of ephedra at similar sites of mummified Caucasian remains in the orient have caused more than a few researchers to view this discovery as evidence of the Bactria Margiana Haoma cult extending into China, a hypothesis we shall further explore shortly. China's *The People's Daily* reported the following of the find in its December 25, 2006, edition:

Chinese scientists have carefully stripped a 2,800-year-old mummy, only to find the corpse underneath the delicate attire of a possible shaman priest

had decayed and broken at the neck and arms. But research work on the mummy would continue, said Dr. Li Xiao, head of the heritage bureau in Turpan, of northwest China's Xinjiang Uygur Autonomous Region.

"We didn't expect the mummy to be so badly decayed, but technically, it won't prevent us from confirming his status and further research on the history of shamanism in northwest China," said Li, a noted historian. The Caucasian-looking mummy was unearthed from a cluster of ancient tombs in Turpan in 2003 and research has been going on since.

Scientists stripped the mummy last week hoping to better preserve it and find out more about the clothing, culture and life of the time the shaman lived, Li said. The mummy had seemed perfectly intact in his heavy outfit: a leather coat, a knitted mantle as well as hat and boots, said Jia Yingyi, a researcher with the regional museum of Xinjiang: "His clothing was largely brown: a brown-and-red mantle with triangular webbing and pants of the same color and with wavy patterns," he said. Archaeologists found a sack of marijuana leaves buried alongside the mummy. He also wore huge earrings of copper and gold, and a turquoise necklace, and held a copper laced stick in his right hand and a bronze axe in the left. His hands were crossed in front of his chest. "From his outfit and the marijuana leaves, we assume he was a shaman," said Li. "He must have been between 40 and 50 years old when he died."

The man was the best preserved and most decoratively-dressed of 600 mummies excavated in 2003 from a cluster of 2,000 tombs in Turpan. A dozen of the mummies are believed to have been shamans.

Archaeologists assume the tombs, which date from the Bronze Age to the Tang Dynasty (618–907), belonged to several big clans.

The tombs also produced a wide variety of stone implements, bronze ware, coloured chinaware pieces and knitwear.

Shamanism used to be common in many parts of north China and shamans, who were believed to be able to communicate with the gods and conjure up the dead, enjoyed a high status.

According to Dr. Hong'en Jiang, when the cannabis was unearthed in 2003, "it was still green, as if it had just been plucked, and completely intact." Dr. Jiang said the Kunming Botanical Institute confirmed the bud was 2,500 years old. "Based on the shamanistic background of the deceased man and ancient customs, it is assumed that the Cannabis was utilized for ritual/ medicinal purposes" (Jiang et al., 2006).

Prior to this find, the main finds of ancient cannabis had come from Eurasia, and the majority of these were carbonized or decayed due to climate and storage conditions. The remains from the Turpan Basin's Yanghai Tombs were extremely well preserved due to the overtly dry climate of the area,

and leaves, buds, and seeds, including glandular trichomes, were preserved in three dimensions, free of distortion, surviving intact for 2,700 years. "These remains of hemp are the oldest examples of Cannabis thus far reported in which macroscopic/microscopic structures can be demonstrated in such great detail. These materials provide us with significant information on ancient civilization . . . and about the utilization of hemp" (Jiang et al., 2006).

All the Cannabis remains could be used for psychoactive purposes, which would suggest that the deceased man knew of the narcotic value of Cannabis. Moreover, based on the analysis of all the funerary objects . . . the owner was considered to be a shaman.

Due to its apparently prolonged use as a pestle, the inner surface of the wooden bowl containing Cannabis had become smooth, and one side became perforated. . . . The Cannabis was presumably pulverized with a mortar before being consumed for psychoactive purposes. Thus, we assume that the deceased was more concerned with the intoxicant and/or medicinal value of the Cannabis remains.

The deceased . . . may have been mainly concerned with the ritual of communication between the human and the spirit world. The gift of Cannabis may have been to enable him to continue his profession in the afterlife. A shaman who knew the utility of herbal medicine also played the role of physician in ancient times. . . . The new discovery of hemp in the Yanghai Tombs, Turpan, China provides evidence . . . [that] hemp was used for medicinal and religious rituals in NW China. (Jiang et al., 2006)

Dr. Russo, arguably the leading authority on the history of cannabis medicines, has also written about this and similar finds noting that the mummified remains were not those of the Oriental people generally assumed as the indigenous inhabitants of the area, but were rather of Caucasian descent:

A large amount of cannabis radiocarbon dated to 2500 years ago was found in the tomb of a Caucasoid male, dressed as a shaman. . . . This site and contents resemble those of other "mummies" of the Tarim Basin associated with hemp artefacts. These nomads may have been speakers of Tocharian, an Indo-European language, and, as the Yuezhi-Kushan people may have provided cultural linkage and possible passage of cannabis knowledge to and from China and India. (Russo, 2007)

Indeed, the shaman's hat was actually covered with cowry shells believed to have come to the Chinese site all the way from the Indian Ocean. Other finds from the area include bronze objects associated with the Russian steppe Scythians, and these demonstrate that a vast trade network was at play in the

ancient world centuries earlier than previously thought. Over 300 Caucasian mummies have been recovered and examined, with other finds of cannabis as well, and it is expected many more tombs exist.

The Xinjiang mummies were dressed in what has been described as a "Celtic tartan" style of clothing. "A detailed examination of a textile fragment by Good (1995) yielded evidence of the same decorative technique as that found in Scottish tartans which, in turn, exhibited similarities to tartans found at Hallstatt in Austria dated to the late second millennium B.C." (Hemphill & Mallory, 2004). In *A Meeting of Civilizations: The Mystery of China's Celtic Mummies* (2006), Clifford Coonan reports, "The discovery of European corpses thousands of miles away suggests a hitherto unknown connection between East and West in the Bronze Age. . . . DNA testing confirms that . . . hundreds of . . . mummies found in Xinjiang's Tarim Basin are of European origin" (Coonan, 2006).

A Celtic origin for the Tarim mummies is more than a bit of a stretch in the minds of most scholars researching the finds. A more likely explanation is that both groups represented divergent geographical ends of the same cultural complex through which the Scythians traveled and migrated through, and indeed a Scythian connection to both the Celtic culture and Tarim mummies has been suggested by more than a few researchers. "The finest examples of Celtic art are directly derived from contact with the Scythians" (Frazier, 1991). A fact that would also account for the finds of cannabis at a variety of Celtic sites as discussed earlier.

Victor Mair, in his article "Prehistoric Caucasoid Corpses of the Tarim Basin," suggested that the textiles worn and associated with the Xinjiang remains were "highly diagnostic, perhaps still more so than DNA analysis, for identifying the origins and affiliations of the Tarim Basin Bronze Age people" (Mair, 1995). The textile and clothing recovered from the sites includes an array of items such as fur-lined and fur-trimmed coats, long stockings, pants, pointed hats, and other items "that Mair (1995, 1998), Mallory and Mair (2000), and Barber (1999) claim are indicative of a close relationship with Indo-European-speaking pastoralist nomads from the Russian steppe [i.e., Scythians]" (Hemphill & Mallory, 2004). Textile expert Elizabeth Wayland Barber, considered the world expert on ancient textiles, after examining the tartan-style cloth, claimed it could be traced back to Anatolia, the Caucasus and the steppe area north of the Black Sea. This same area was the home of the ancient cannabis using Sredeni Stog we discussed at the beginning of this study, as well as their descendants the Scythians. A connection to the Tarim Basin mummies with these people is further evident by the early use of the horse by the Tarim Basin culture, a means by which that they were able to migrate to the area so far from their original homeland, and colonize it, four millennia ago.

Interestingly, contact between the cannabis using the Gushi culture and one of the most intriguing archeological religious finds of the 20th century, the 4,000-year-old temple sites of the Bactria Margiana Archeological Complex (BMAC), has also been established. And this connection is wrought with implications regarding the identity of what is widely regarded the most popular religious sacrament of the ancient world, the haoma of the Zoroastrian religion, and its counterpart the soma of the Vedic religion of ancient India.

CANNABIS AS SOMA

Pointing out the widespread religious use of hemp throughout the ancient Near East, amongst the Babylonians, Assyrians, Scythians, and Hebrews, as well as the early spread of its cultic use from northern Europe to Siberian Asia, China, India, Asia minor, and Southeast Asia, the famed anthropologist Weston La Barre suggested that "cannabis was part of a religio-shamanic complex of at least Mesolithic age, in parallel with an equally old shamanic use of Soma" (La Barre, 1980).

La Barre mentions soma, an ancient psychoactive beverage that was the source of the Vedic religion in India, and the Mazdean religion of ancient Persia, where it was known as haoma. This ancient sacrament was one of the most widely used inebriants of the ancient world. The identity of soma-haoma has been a longtime matter of debate. La Barre unfortunately accepted Robert Gordon Wasson's identification of soma, as the *Amanita muscaria* mushroom, which has remained the prevailing view since the early 1970s. As well, David Stophlet Flattery and Martin Schwartz have hypothesized that the Persian haoma was *Peganum harmala* or Syrian rue, and this designation has held to be equally as strong as that of Wasson's. But what if one were able to show that these identifications were incorrect and that the ancient soma-haoma was in fact cannabis? This would mean that hemp was the most celebrated religious sacrament in the history of humanity and that its use would be twice as widespread as La Barre has suggested for either cannabis or soma!

In my book *Cannabis and the Soma Solution*, I detail numbers of flaws in the *Amanita muscaria* soma theory of Wasson, in *Soma: Divine Mushroom of Immortality*, and the haoma harmala theory of Flattery and Schwartz, which space does not allow for me to reiterate in too much detail here. Briefly though, Wasson's theory is based on assumption of Vedic ritual urine drinking in association with soma, which is not supported by the Vedic texts (Ingalls, 1971; Flattery & Schwartz; 1989). He explained that Hindu references occur in the text of the *Mahabharata*, when the god Indra, disguised as an outcaste, gives the hero Uttanka, amrta (ambrosia), to drink in the form of urine, an interpretation I am willing to accept. But it should be noted that

this reference does not appear in the *Vedas*, and by his own acknowledgment, it occurs, about a thousand years later than the date in question, and there are no indication that this bizarre act is in anyway associated with the fly agaric or any other mushroom for that matter. (However urine drinking has played a role in Indian and Tibetan medicines).

My greatest criticism of Wasson's book *Soma: Divine Mushroom of Immortality* is that for the most part, it only deals with about half the evidence, the Avestan material that deals with haoma is only dealt with in a few passages, and a large part of the *Vedas* are purposely left out of the discussion!

I exclude from consideration the latest hymns to have been written, the last to be included in the canon before it was closed. These hymns differ from the others considerably in tone and language, and there is reason to believe there are substitutes, which I think had always been occasionally used, and now almost completely replaced the Soma sacrifice. These hymns are mostly in Mandala X from 85 through 191. (Wasson, 1968)

Wasson favors the *Rig Veda* (or rather parts of it) over the Zoroastrian *Avesta* with the acknowledgment and explanation that "Religiously and linguistically the Avesta and Rgveda are siblings. The text of the Rgveda is, however, much purer owing to its marvellous preservation through the ages by the disciplined human memory" (Wasson, 1970b). One is left wondering who he felt had preserved the tradition of the *Avesta*! Having read translations of both texts, what I could see was a profound similarity in both content and style.

As Wasson conveniently states, "In the *Rig Veda* (excluding the latter half of the Mandala X, last to be admitted to the canon) there is no reference to the root of the Soma plant, nor its leaves, nor its blossoms, nor its seed" (Wasson, 1970a). His often repeated mistake here is based solely on omission. It should be noted that only a few of the passages that are left in his exclusive study deal with the plant soma, many deal with the beverage soma, the god soma, and the moon (which was viewed as the celestial goblet of soma from which the gods drank, and which was continually replenished by the sun). By the exclusion of the *Rig Veda's* 10th Mandala, which holds the most descriptive account of the plant soma in the *Vedas*, Wasson purposely limited the passages discussed to those that fit his view. Alternatively, in the *Vedic Index* (1958), MacDonell and Kieth associated the Vedic term *naica-sakha* with soma, and this indicates branches (or twigs and leaves) hanging down, which would again give indications of cannabis. Vedic scholar, Dr. N. R. Waradpande (who, as shall be discussed, identifies cannabis as the source of the ancient Vedic elixir) also felt Vedic descriptions indicated branches and leaves (Waradpande, 1995).

Ali Jafarey, who has been writing on the Zoroastrian religion for over 40 years, has written that "the mushroom seems to be far-fetched" as the original soma. In an essay called *Haoma: Its Original and Later Identity*, he wrote that the commonly used modern ingredient for the haoma ceremony, ephedra, is "void of all the qualities described in the Avesta and the Vedas" (Jafarey, 2001).

"The description of the plant is that it was greenish in color," writes Jafarey, "grew on mountains well north of the Indus Valley, was traded by outsiders, had a special ritual to prepare, was an instant intoxicant prepared from pounding and extracting its juice, and that the Saka tribes of eastern Central Asia are called 'haumavarka' (Haoma-gatherers) by Achaemenians; all point, in my opinion, to what is now known as Indian hemp" (Jafarey, 2001). The "Saka tribes" to which he refers are more popularly known as the Scythians.

Just as the identification of the fly agaric mushroom as soma has been widely accepted, the harmaline-containing plant Syrian rue has come to be identified with the Persian haoma, and this is largely due to the exhaustive work of Flattery and Schwartz in their admirable book *Haoma and Harmaline* (1989). Noting that the modern plant used in the haoma ritual ephedra had none of the psychoactive properties alluded to in the Avestan texts, Flattery and Schwartz put forth the suggestion that the original brew also held the harmaline-containing plant Syrian rue.

The duo convincingly identified the Persian references to haoma (which he translates as *sauma*) and *bhang* (also *mang*, which is the later Pahlavi form of the word) as identifying the same entheogenic preparation. But they both saw the Persian term *bhang/mang* (identified as cannabis by numerous other researchers, and still in use in this context in both Persia and India to this day) as having a more general meaning such as narcotic or intoxicant, and particularly for Flattery's purposes as identifying Syrian rue, but here the coauthors disagree, as Schwartz saw the term as more likely identifying henbane or datura. However, the more general view is that *bang*, *banha*, and *mang*, all with "an" in them, follow in league with other terms for cannabis in languages that originated from Indo-European dialects; English *cannabis*, French *chanvre*, German *hanf*, Indian *sana* and *bhang*, Avestic *bayha*, and so on.

Beyond the etymological argument, the suggestions of henbane and datura, as *mang*, I would argue, are far too toxic to have been the plant ingested in such quantities in the ancient texts. This is especially true of the Avestan and Vedic descriptions of haoma and soma that depict a drink that was joyful, healing, and taken quite liberally. In order to buttress their argument, the duo has gone on to claim that "With regards to 'hemp' called *bhanga* and *sana* in Sanskrit, there is no evidence for its use as an intoxicant in either

India or Persia before well within the Islamic era" (Flattery & Schwartz, 1989). However, this is clearly not the case, as the widespread use of cannabis throughout the ancient world, we have already discussed, clearly indicates.

Beyond the linguistic and textual arguments regarding description and so forth, which I discuss at length in my book on the topic, recent archaeological evidence gives clearer indications as what other plants were most likely used in this ancient psychoactive preparation. The work of Russian archaeologist Victor Sarianidi and his finds at the BMAC, with its temple site that he believes were devoted to the preparation of the sacred Aryan drink the haoma (although Sarianidi himself has chosen to use the Vedic term soma in this regard), have offered up some interesting information in this regard.

According to Sarianidi, "[F]or the first time in the world archaeological practice, monumental temples were found in which intoxicating beverage of the soma-haoma type were prepared for cult ceremonies. . . . The excavations documentally proved that . . . cannabis and ephedra were used for making the soma-haoma drinks, and thickets of these plants were found in excess in the vicinity of the excavated temples of Margiana" (Sarianidi, 2003).

The Soviet archaeologists uncovered a massive shrine, about the size of a football field, dating from 2000 BC. The shrine consisted of two parts, one of which was obviously for public, but the other, as researcher Richard Rudgley describes, was "hidden from the gaze of the multitude, an inner sanctum of the priesthood" (Rudgley, 1998). "In one of these private rooms were found three ceramic bowls," continues Rudgley. "Analysis of samples found in these vessels by Professor Mayer-Melikyan revealed the traces of both cannabis and ephedra. Clearly both these psychoactive substances had been used in conjunction in the making of hallucinogenic drinks" (Rudgley, 1998).

The preparation room was right next door. "In the adjoining room of the same inner sanctum were found 10 ceramic pot-stands which appear to have been used in conjunction with strainers designed to separate the juices from the twigs, stems and leaves of the plants. In another room at the other end of the shrine a basin containing remains of a considerable quantity of cannabis was discovered, as well as a number of pottery stands and strainers that have also been associated with making psychoactive beverages" (Rudgley, 1998).

Remnants from vessels recovered at the site and involved in the preparation of the sacred drink have impressions from cannabis seeds left in the gypsum that settled over the millennia. Remnants of ephedra, poppy, and mostly cannabis were also found in the white sediment stuck to the sides of ancient pots and pitchers. Russian archaeologist Sarianidi says this proves these plants "were used for making the Soma/Haoma drinks." Based upon the size of the archaeological site, the Russian team believes that the temple served as a major depot for the entheogenic drink, and that devotees traveled from a wide area to imbibe of it there.

The addition of the mildly stimulating plant ephedra in this preparation likely accounts for the reputation of soma to keep one awake. This was probably done in the same spirit as medieval Sufis, who would eat hashish and drink lots of strong coffee, then stay up all night playing religious music.

In relation it should be noted that in the case of the Gushi mummies and the discovery of cannabis, many mummies were found that had bundles of ephedra with them, and these include even the earliest of the mummies found in the Tarim Basin (1800 BC). Likewise in Chinese culture, ephedra and cannabis had a very close association. "The two medicinal plants, Cannabis and Ephedra, are given very allied names in Chinese; Cannabis = Huang-Ma and Ephedra = Ma Huang. These names are mirror images of each other and as such next to being identical" (Mahdihassan, 1982).

As Barber explains in her book on the Gushi culture, *The Mummies of Urumchi*:

[W]e know that early oasis hoppers were experimenting with hashish and opium. . . . New cross-cultural archaeological data shows that the oasis settlers set up major ties to the south as they worked their way eastward. Thus the cult of the White room [BMAC] had ready avenues for a rapid southward spread across the Iranian plateau. (Barber, 1999)

This connection brings us to the Bactrian oasis hypothesis for the Tarim Basin mummies. "Proponents of this model assert that settlement of this region of western China came not from nomadic pastoralists of the steppe, but from sedentary, agriculturally based populations of the . . . Bactrian-Margiana archaeological complex (BMAC)" (Hemphill & Mallory, 2004). The suggestion here is that the archaeological evidence indicates that the initial colonizers of the Tarim Basin were agriculturalists from the BMAC region, rather than nomadic pastoralists from the Russian steppe. The evidence for this theory "not only includes irrigation systems, evidence of western cultigens such as wheat, and bones of sheep and goats, but also evidence of carefully bundled bags containing *Ephedra* sp. found accompanying many Bronze Age Xinjiang burials" (Hemphill & Mallory, 2004):

Use of ephedra is well-known in . . . [BMAC] and Sarianidi . . . found evidence of specialized areas known as "white rooms" where it is believed a ritual drink, known as *haoma* in Iranian and *soma* in India, was consumed. . . . Ephedra does not grow on the Russo-Kazakh steppe, nor is it associated with either Afanasievo or Andronovo cultures. (Hemphill & Mallory, 2004)

Another interesting point is that the easternmost branch of the Scythians, living in the Tien Shan Mountains, are called *Haumavarka* (*haoma* gatherers),

and as archaeological evidence indicating trade and connections between the Scythians, Indo-European Gushis, and the Soma temples of BMAC has been established, it does not become hard to see that the ritual use of cannabis and its trade was a major part of this. In this way, the Chinese Hu Ma (Scythian hemp) made its way as haoma to the temples of BMAC, via the nomadic traders the Scythian haomavarga (haoma gatherers), and eventually through the extensive ancient world Indo-European trade routes, into India as soma, with the obvious linguistic changes from one culture to the other being Hu Ma, to haoma, and then soma.

In regard to haoma and its disappearance, this has been attributed to Zoroaster instilling prohibitions against the plant's use in the Iranian cult due to its use in orgiastic rituals that involved copious animal sacrifices. However, later a milder version of the potent entheogenic potion appeared in Zoroastrian ritual use, and this has been the situation down to the present day. Interestingly, in modern rituals, the plant ephedra is still used. But, there are a number of references in Zoroastrian literature that clearly indicate Zoroaster continued to use cannabis himself for shamanic purposes, as well as in the initiations of his select chosen few. As has been noted, "Zoroastrian reform was directed against wild ecstasy, but the Younger Avestan priests reintroduced the use of bang, mang, and hom" (Sullivan, 1989).

As noted, this designation of *mang*, *bhang* as identifying cannabis has been accepted by a variety of Zoroastrian scholars, such as Dr. Jahanian Daryoush who refers to *bhang* in his essay "Medicine in Avesta and Ancient Iran": "**Bangha** (Avesta: *bhangh*, Sanskrit: *bhanga*, Persian: *Bang*, hashish)—It is extracted from . . . *Canabis Indica* has hallucinating effects. In ancient Iran it was mixed with wine to deliver anesthesia" (Daryoush, 2005). As Parvaneh Pourshariati has also noted more recently in the *Decline and Fall of the Sassanian Empire* (2008), "mang—a mixture of hemp and wine, with intoxicating properties." As also noted by other Zoroastrian scholars, "Bhanga . . . or mang, a narcotic made from hempseed . . . the dried leaves and small stalks of *Cannabis indica*" (Dubash, 1906) and "hemp (*Av ba gha*-Phl. *mang*)" (De Jong, 1997).

In reference to Zoroastrian expeditions into the world of the afterlife, Shaul Shaked noted that "The preparation of this journey was done . . . by administering to the officiant a dose of *mang* (hemp), mixed with wine" (1999). In the Zoroastrian tale, "*the Artak Viraz Namak* . . . Hell, Purgatory, and Heaven, the rewards bestowed on the good, and the punishment awaiting the sinner are here described in a vision induced by hashish" (Campbell, 2000). Referring to this same account, Theodorus Petrus van Baaren and Sven Hartman also noted the hero "imbibes an intoxicant composed of wine and hashish and after this his body sleeps for seven days and nights while his soul undertakes the journey" (1980). The 19th-century author James Francis Katherinus Hewitt also refers to the "enlightening prophet drug Bangha

(Cannabis Indica), the Hashish by which the Zoroastrian priests were inspired" (Hewitt, 1901).

The *Den Yasht*, 16.14–15, refers to bhang as "Zoroaster's good narcotic." As De Jong explains, "hemp (Av *ba gha- Phl. mang*), which although not spoken of favorably in the Vendidad, is consumed of by some of the holiest men of the Zoroastrian tradition (Vistaspa and Arda Wiraz) and can therefore not have been wholly evil" (De Jong, 1997). In *Persian Mythology*, John Hinnells translates *mang* as cannabis in the Zoroastrian creation myth account (G Bd. 4.20) where Ahura-Mazda (god) gave the first created ox "cannabis [*mang*]" to ease her discomforts in the throes of death" (Hinnells, 1973). Likewise, the authors of *The Cambridge History of Iran* record of the reference in this same verse as "*bang*, identified with *mang* (hemp) [used for] inducing unconsciousness" (Fisher et al., 1993).

It should be noted that even during periods of the Zoroastrian use of cannabis, this was not a common practice and was far from widespread. Unlike the use of the pre-Zoroastrian haoma and its denatured counterpart after Zoroaster's reforms, which were open to much of the community, the use of *bang/mang* in the Zoroastrian period was strictly prohibited from anyone but the most elite members of that society. The secrecy surrounding the use of *bang/mang* is likely largely responsible for much of the confusion surrounding the terms *mang* and *bang*. In "Quests and Visionary Journeys in Sassanian Iran," Shaked notes that the use of *mang* (which he saw as hemp), for visionary quests, "was not a way open to all":

It was confined to select individuals, who would have regarded themselves as representative of the community, and who would then reveal to the others what they had been privileged to witness. Even for those people this was not a trivial experience that could be undertaken casually or easily repeated. Such journeys were rare occasions, surrounded by grave risks. The danger lay in the very fact that this was the path trodden by the dead, and would have to be brought back to life. Certain encounters along the way may put the power of endurance of the traveler to the test. (Shaked et al., 1999)

Zoroaster's wife was not satisfied with only a secondary shamanic experience, and after hearing about Zoroaster's visions, she prayed to the Supreme Being that Zoroaster "give her his good narcotic, bangha." James Darmesteter commented on this in his 19th-century translation of the relevant passages from the *Den Yasht*, 16.14–15:

To whom the holy Hvovi (Zarathustra's wife) did sacrifice with full knowledge, wishing the holy Zarathustra would give her his good narcotic

(bangha; so-called Bang of Zoroaster, Vendidad XV, 14, what must have been its virtue may be gathered from legends of Gustap [Vistaspa] and Ardu Viraf, who are said to have been transported in soul to heavens, and to have had the higher mysteries revealed to them, on drinking from a cup prepared by the prophet—Sardust namah—or from a cup of Gustap-bang) that she might think according to the law, speak according to the law, and do according to the law. “For her brightness and glory, I will offer unto her a sacrifice worth being heard” (Darmesteter, 1883b)

Darmesteter mentions the Zoroastrian psychonaut Ardu Viraf (aka Arda Wiraz and other spellings), a figure widely credited with bringing to the world many of the concepts of Heaven and Hell. In the Zoroastrian tale, “*the Artak Viraz Namak . . . Hell, Purgatory, and Heaven*, the rewards bestowed on the good, and the punishment awaiting the sinner are here described in a vision induced by hashish” (Campbell, 2000).

Bhanga/mang, in these Zoroastrian accounts, was used in a potent shamanic preparation that would quite literally send the devotee into a deathlike coma filled with vivid dreamlike visions. Because of these descriptions, few researchers have considered cannabis potent enough to have been the substance in question, but this is an assumption based on dosage, and ingestion of potent cannabis extracts can indeed be quite potent.

As it stands, in my own research, I have come across numerous references that refer to descriptions from a variety of sources detailing such experiences induced by cannabis preparations, particularly amongst 19th-century occultists. Besides the well-known vivid voyages into the astral realms recorded by members of the *le Club des Haschichins*, which included such figures as Alexander Dumas, Victor Hugo, Theophile Gautier, Gerard de Nerval, and Charles Baudelaire, we also have more than a dozen such accounts recorded in Louis Alphonse Cahagnet’s *Sanctuary of Spiritualism* (1848) that recorded the descriptions of a variety of French psychonauts who partook of 3 grams of hashish and were interpreted by Cahagnet as evidence of communication with the world of the dead. Other such examples have been recorded (Bennett et al., 1995).

Like the loss of the original haoma however, this shamanic use of cannabis products seems to have disappeared from the Zoroastrian religion; in this case, it happened sometime after the advent of Islam, when the Zoroastrian religion was forcibly suppressed, and much sacred knowledge was lost.

In regard to the situation in India, in his 1995 booklet, *The RgVedic Soma*, the Vedic scholar Waradpande, who identified cannabis as soma, suggested that the loss of the knowledge of soma’s identity was through the decline of the Vedic ritual, the Yajna, which came about under the influence and development of Buddhism. Sacrifice continued in the Vedic mode, but this

was far different from the Yajna being in common practice (Waradpande, 1995). Apparently, in India, during Buddhist times, there was a widespread prohibition of intoxicants, as Khwaja Hasan notes in *Social Aspects of the Use of Cannabis in India*:

The Buddhist Age in India began in the sixth century before Christ, and Buddhism gradually supplanted Brahmanism as a national religion. Buddhism prohibited the use of intoxicants to its followers. . . . However, Brahmanism was revived in the tenth century of our era. Modern day Hinduism, therefore, is the result of cumulative influence of post-Vedic times. . . . Historically, the consumption of alcoholic drinks and hemp drugs is reported to be in use up to the 8th or 9th century A.D., i.e., prior to the advent of Muslims in the country. (Hasan, 1975)

Buddhist prohibitions and the suppression of the soma cult were also noted by Badrul Hassan, some decades earlier, in his 1922 edition of *The Drink and Drug Evil in India*. Buddha's influence of sobriety took in some quarters, but not in all, and despite this frowning on the use of intoxicants and the complicated rituals of the Brahmins, cannabis continued to be used and consecrated as soma, and enjoyed by both the common people and the aristocrats for at least a few centuries, until much harsher reforms, contained in *The Book of Manu*, seem to have effectively driven it away from the ceremonial life of the Brahmins.

Another complicating factor in the disappearance of the soma was likely a growing public resentment over the increasing prices of soma, which in the early Vedic period was largely imported. Evidence indicates it took some time for indigenous agriculture of the cannabis to take hold. Like the booming illicit cannabis market of today, soma was big business in the ancient world as well. For the Vedic Indians, "Cattle was their standard value and medium of exchange. Some taxes were levied on some imports, particularly on Soma (*Cannabis Sativa*). Some traffickers (*Soma Vikrayin*) became unpopular, for they charged a high price for their commodity" (Chakraberty, 1944). "[T]he sacrificer pays the price of a cow in money to the Brahman who brings him the Soma. To sell Soma is regarded as very disreputable. The seller is not admitted to the sacrificial compound nor invited to the great dinner which the sacrificer must give to Brahmins at the end of the sacrifice" (Haug, 1863).

In relation to Buddha, it is interesting to note that according to some sources he was of Scythian heritage, via Persia, where they were known as Saka. The Scythian influence was so strong in Northern India, that from about the first century BC to AD 300 was known as the Scythian period (Ben-nett, 2010).

No ancient references to Buddha's use of the popular intoxicants of his culture exist, but it is hard to believe that in his time as a prince he did not partake of the soma at some point. The evidence I could find of Buddha's relationship with cannabis generally relate to the ingestion of hemp seeds, although an account occurring in the medieval Buddhist text, the *Tārātantra*, indicates a later use of cannabis to produce "ecstasy" amongst some Buddhist of that time. In the 19th-century account, *The Gospel of Buddha* (1897), Dr. Paul Carus (1852–1919) recorded the following passage:

So the Bodhisattva continued for six years
 Patiently torturing himself and suppressing the wants of nature.
 In the modes of a rigorous ascetic life.
 At last he ate each day one hemp grain only,
 Seeking to cross the ocean of birth and death
 And arrive at the shore of deliverance

Unfortunately, Carus, like many 19th-century researchers, failed to identify a particular reference for this quote, but this tradition can be traced back to much earlier accounts. In relation to the hemp-seed reference in the Chinese work. The following earlier verse from AD third-century Indian text, the *Lalita Vistara*, was cited as a likely source:

The prince coming to the Ka-ye (Gaya) mountain, to the Ni-h'n (Nairanjana) river, reflected, considering that, as he intended to penetrate to the secret influences which actuate the conduct of men, he might, after six years, be in a position to save them. Thus he addressed himself to the practice of austerities (Dushkaracharya), each day eating one grain of hemp, one grain of rice; by this means reducing himself to a condition of overcoming all pleasure. Afterwards, perceiving that this was not the true way, he pursued the contrary method, using indulgences, bathing, perfuming himself, and so on; by these means he subdued sorrow (as the text says).

The *Lalita Vistara* does mention "indulgences" to subdue sorrow, which opens up some possibilities of intoxication, but a vague reference from a text thought to be composed some eight centuries after the life of Buddha is unfortunately a weak piece of evidence to make any case. However, in the much later Buddhist text the *Tārātantra*, cannabis is described as being essential to spiritual "ecstasy." The author of the medieval text, Taranatha records the Buddha saying that drinking wine without also having consumed cannabis "cannot produce real ecstasy," which was seen as a pivotal step in attaining enlightenment (Maitra, 1983; White, 1996). However, it should be noted that the *Tārātantra* is a relatively minor text, composed two millennia after the

life of Buddha (1600), and it has not exerted much influence on the Buddhist religion.

Other medieval Buddhist references have also been noted. "Over the last few decades, university religious studies departments have produced translations of Buddhist tantric texts of unprecedented quality, providing ample material for an examination of psychoactive plant use by Buddhists in Asia" (Parker & Lux, 2008).

Although the Vedic consecration of cannabis as soma seems to have declined and come to an end, the sacramental use of cannabis in India has continued on the present day, in a variety of traditions. In post-Vedic India, cannabis has been particularly devoted to the indigenous Indian deity Shiva, who's worship goes back to the Stone Age, and is said to be the longest continually worshipped God of the present day. Interestingly, Shiva was popular with the Scythian settlers of Northern India, and this author owns a second-century gold coin with the image of Shiva and his bull Nandi on one side, and the other with a Scythian king holding the god's trident with a serpent coiled around his neck, as Shiva appears in many images.

As the 19th-century *Indian Hemp Drugs Commission Report* recorded of Shiva's cultic connection to cannabis:

It is chiefly in connection with the worship of Siva, the . . . great god of the Hindu trinity, that the hemp plant, and more especially perhaps ganja, is associated. The hemp plant is popularly believed to have been a great favourite of Siva, and . . . the drug in some form or other is . . . extensively used in the exercise of the religious practices connected with this form of worship. . . . [R]eligious ascetics, who are regarded with great veneration by the people at large, believe that the hemp plant is a special attribute of the god Siva, and this belief is largely shared by the people. . . . There is evidence to show that on almost all occasions of the worship of this god, the hemp drugs in some form or other are used . . . these customs are so intimately connected with their worship that they may be considered to form in some sense an integral part of it. (Campbell, 1894)

Although Shiva is the lord of *bhanga*, cannabis appears in offering to a number of other deities such as those dedicated to Shiva's consort Kali, goddess of life and death. Kali's cannabis mantra is "*Om, Hrim Ambrosia, that springeth forth from ambrosia, Thou shalt showerest ambrosia, draw ambrosia for me again and again. Bring Kalika within my control. Give success; Svaha*" (Avalon, 1913). In Tantric rites, cannabis retained its ancient Vedic epithet of "Vijaya" (victory). As Arthur Avalon (aka Sir John Woodroffe) explained, "Vijaya, (victory) used in ceremonies to Kali: That is the narcotic Bhang (hemp) . . . used in all ceremonies" (Avalon, 1913).

In his exquisite essay on the importance of cannabis in Indian spirituality, "On the Religion of Hemp," J. M. Campbell noted that "So holy a plant must play a leading part in temple rights" (1894). Clearly with celebrations like the *Kumbha Mela* and other holidays where hemp products have been commonly consumed in India for centuries if not millennia, the same can be said of Indian festivals as well. It should also be noted that the "use of *bhanga* by Brahmans and householders at festivals has a form and style that may be traced to *soma*" (Morningstar, 1985). As the 19th-century *Indian Hemp Drugs Commission Report* noted of this and other festivities, "at the Holi festival . . . *bhanga* is commonly consumed; and, according to many witnesses, at such festivals as the Diwali, Chait Sankranti, Pous Sankranti, Sripanchami, Sivachaturdasi, Ramnavami, and indeed on occasions of weddings and many other family festivities" (IHDCR, 1894).

Other later religions, such as certain Islamic offshoots, like Sufi and Dervish groups, as well as Sikhs, Bauls, and others also adopted this ritual use of cannabis, all believing they received some sort of unified spiritual experience in the substances they prepared from this ancient plant. I think Campbell's conclusion of his more than a century-old report, "On the Religion of Hemp," really captures that common element which these various traditions have found in this most controversial of plants:

[T]o its devotee *bhanga* is no ordinary plant . . . [it] became, holy from its guardian and healing qualities. . . . [T]o the worshippers of the influences that, raising man out of himself and above mean individual worries, make him one with the divine force of nature, it is inevitable that temperaments should be found to whom the quickening spirit of *bhanga* is the spirit of freedom and knowledge. In the ecstasy of *bhanga* the spark of the Eternal in man turns into light the murkiness of matter or illusion and self is lost in the central soul-fire. . . . To the meaner man, still under the glamour of matter or *maya*, *bhanga* taken religiously is kindly thwarting the wiles of his foes and giving the drinker wealth and promptness of mind . . . a guardian whose gracious protection saves them from the attacks of evil influences, and whose mighty power makes the devotee of the Victorious, overcoming the demons of hunger and thirst, of panic fear, of the glamour of *Maya* or matter, and of madness, able in rest to brood on the Eternal, till the Eternal, possessing him body and soul, frees him from the having of self and receives him into the ocean of Being . . . "We drank *bhanga* and the mystery I am He grew plain. So grand a result, so tiny a sin." (Campbell, 1894)

In this universal use of cannabis, we can see an element of a more natural perennial sort of tradition, not based on dogma or religious text, but one that has bypassed all those borders and penetrated all of them, like a seed

planted in dirt sprouting as a natural perennial spiritual force. I would also say that this history of cannabis in a certain way is a threat to some of the more dogmatic elements that texts and traditions can result in. It could be seen that this evidence of the shamanic use of cannabis in regard to some of the biblical accounts, for instance, is as much a threat to the Fundamentalist worldview, as Darwin's theory of evolution was to the myths of creation in Genesis, as what they indicate is the plant-based shamanic origins of that tradition itself, a technique of religious ecstasy the Bible-based traditions have tried to repress everywhere they came into contact with them, whether it be the repression of Gnostic and pagan cults at the commencement of the Dark Ages, the burning of medieval witches at the stake, the outlawing and destruction of indigenous mushroom and cacti traditions of North and South America, etc. Hopefully, the reintroduction of such sacred knowledge and our connection with such beneficial plants can be seen as a return of sorts to Eden and a new appreciation of such valuable plant allies.

REFERENCES

- Abel, Ernest, *Marihuana: The First Twelve Thousand Years* (Plenum Press, 1980).
- Anthony, David W., *The Horse, the Wheel, and Language: How Bronze-Age Riders from the Eurasian Steppes Shaped the Modern World* (Princeton University Press, 2008).
- Avalon, Arthur, *The Great Liberation* (Ganesh Publishing, 1913).
- Barber, E. M., *Pre-historic Textiles* (Princeton University Press, 1989).
- Barber, Elizabeth J. Wayland, *Prehistoric Textiles: The Development of Cloth in the Neolithic and Bronze Ages with Special Reference to the Aegean* (Princeton University Press, 1991).
- Barber, Elizabeth J. Wayland, *The Mummies of Urumchi* (W. W. Norton, 1999).
- Benet, Sula, "Early Diffusions and Folk Uses of Hemp," in *Cannabis and Culture*, ed. Vera D. Rubin (Moutan, 1975).
- Bennett, Chris, *Cannabis: A Healing and Magical Balm* (Cannabis Culture, 2006).
- Bennett, Chris, *Cannabis and the Soma Solution* (Trine Day, 2010).
- Bennett, Chris and McQueen, Neil, *Sex Drugs, Violence and the Bible* (Forbidden Fruit Publishing, 2001).
- Bennett, Chris, Osburn, Lynn, and Osburn, Judy, *Green Gold the Tree of Life: Marijuana in Magic & Religion* (Access Unlimited, 1995).
- Bey, Hakim Zug, Abel, *Orgies of the Hemp Eaters* (Autonomedia, 2004).
- Cahagnet, Louis Alphonse, *Sanctuary of Spiritualism* (Germer Baillier, 1848).
- Campbell, George L., *Compendium of the World's Languages: Ladakhi to Zuni*, 2nd revised ed. (Taylor & Francis, 2000).
- Campbell, James M., "On the Religion of Hemp," in *Indian Hemp Drugs Commission Report 1893-1894*, eds. Young, M. et al., Appendix C (Government Central Printing Office, 1894).
- Carus, Paul, *The Gospel of Buddha* (Open Court Publishing, 1897).
- Chakraberty, Chandra, *The Racial History of India* (Vijaya Krishna Bros, 1944).

- Coonan, Clifford, "A Meeting of Civilisations: The Mystery of China's Celtic Mummies," *The Independent* (UK) (August 28, 2006).
- Darmesteter, James, *Etudes Iraniennes*, 2 vols. (F. Vieweg, 1883a).
- Darmesteter, James, *The Zend-Avesta* (Clarendon Press, 1883b).
- Daryoush, Jahanian, "Medicine in Avesta and Ancient Iran," https://www.facebook.com/note.php?note_id=470719406511 (August 18, 2005).
- de Jong, Albert, *Traditions of the Magi: Zoroastrianism in Greek and Latin Literature* (Brill, 1997).
- Dubash, Sorabji Edalji, *The Zoroastrian Sanitary Code, with Critical and Explanatory Notes* (Sanj Vartaman Printing Press, 1906).
- Eliade, Mircea, *A History of Religious Ideas*, Vol. 2 (University of Chicago Press, 1982).
- Emboden, William A. Jr., "Ritual Use of Cannabis sativa L.: A Historic-Ethnographic Survey," in *Flesh of the Gods*, ed. Peter T. Furst (Praeger, 1972).
- Fisher, William Bayne, Gershevitch, Ilya, Yar-Shater, Ehsan, Frye, Richard N., Boyle, J. A., Jackson, Peter, Lockhart, Laurence, Avery, Peter, Hambly, Gavin, and Melville, Charles, *The Cambridge History of Iran: The Land of Iran*, ed. William B. Fisher; Vol. 2: *The Median and Achaemenian Periods*, ed. Ilya Gershevitch; Vol. 3: *The Seleucid, Parthian, and Sasanian Periods*, ed. Ehsan Yar-Shater (2 parts); Vol. 4: *The Period from the Arab Invasion to the Saljuqs*, ed. Richard N. Frye (Cambridge University Press, 1993).
- Flattery, David Stophlet and Schwartz, Martin, *Haoma, and Harmaline: The Botanical Identity of the Indo-Iranian Sacred Hallucinogen "Soma" and Its Legacy in Religion, Language, and Middle Eastern Folklore* (University of California, 1989).
- Frazier, Jack, *The Great American Hemp Industry* (Solar Age Press, 1991).
- Geiwitz, James and the Ad Hoc Committee on Hemp Risks, *THC in Hemp Foods and Cosmetics: The Appropriate Risk Assessment* (January 15, 2001).
- Hasan, Khwaja, "Social Aspects of the Use of Cannabis in India," in *Cannabis and Culture*, ed. Vera D. Rubin (Moutan, 1975).
- Hassan, Badrul, *The Drink and Drug Evil in India* (Ganesh & Co., 1922).
- Haug, Martin, *Aitareya Brahmanam of the Rigveda*, translated and explained (Government Central Book Depot, 1863).
- Hemphill, Brian E. and Mallory, J. P. (2004), "Horse-mounted Invaders from the Russo-Kazakh Steppe or Agricultural Colonists from Western Central Asia? A Cranio-metric Investigation of the Bronze Age Settlement of Xinjiang," *American Journal of Physical Anthropology* 124, no. 3 (July 2004): 199–222.
- Hewitt, James Francis Katherinus, *History and Chronology of the Myth-making Age* (J. Parker and Co., 1901).
- Hinnells, John R., *Persian Mythology* (The Hamlyn Publishing Group, 1973).
- Ingalls, D.H.H., "Soma," *New York Times Book Review* (September 1971).
- Jafarey, Ali A., "HAOMA: Its Original and Later Identity," in *The Plain Reality behind the Intricate Falsity*, <http://www.factnfalse.com/Haoma,%20Its%20Original%20and%20Later%20Identity.htm> (2001).
- Jiang, Hong-En, Li, Xiao, Zhao, You-Xing, Ferguson, David K., Heuber, Francis, Bera, Subir, Wang, Yu-Fei, Zhao, Liang-Cheng, Liu, Chang-Jiang, and Li, Cheng-Sen, "A New Insight into Cannabis sativa (Cannabaceae) Utilization from

- 2500-Year-Old Yanghai Tombs, Xinjiang, China," *Journal of Ethnopharmacology* 108, no. 3 (2006): 414–422.
- Jiang, Hong-En, Li, Xiao, Ferguson, David K., Wang, Yu-Fei, Liu, Chang-Jiang, and Li, Cheng-Sen, "The Discovery of *Capparis spinosa* L. (Capparidaceae) in the Yanghai Tombs (2800 Years b.p.) NW China, and Its Medicinal Implications," *Journal of Ethnopharmacology* 113, no. 3 (2007): 409–420.
- La Barre, Weston, *Culture in Context: Selected Writings of Weston La Barre* (Duke University Press, 1980).
- Langerheim, Jean H., *Plant Resins: Chemistry, Evolution, Ecology, and Ethnobotany* (Timber Press, 2003).
- Lewin, Louis, *Phantastica: Narcotic and Stimulating Drugs, Their Use and Abuse*, translated from the 2nd German edition by P.H.A. Wirth (Kegan Paul & Co., 1931).
- Li, Hu-Lin, "The Origin and Use of Cannabis in Eastern Asia: Their Linguistic-Cultural Implications," in *Cannabis and Culture*, ed. Vera D. Rubin (Mouton, 1975).
- MacDonell, Arthur A. and Keith, Arthur B., *Vedic Index* (Motilal Banarsidass, 1958).
- Mahdihassan, S., "Etymology of Names—Ephedra and Cannabis," *Studies in the History of Medicine* 6(1982): 63–66.
- Mair, Victor H., "Prehistoric Caucasoid Corpses of the Tarim Basin," *Journal of Indo-European Studies* 23, no. 3–4(1995): 281–307.
- Mair, Victor H., *The Bronze Age and Early Iron Age Peoples of Eastern Central Asia*, Vol. 1 (University of Pennsylvania Museum Publications, 1998).
- Maitra, Akshaya Kumar (ed.), *Tārāntra, author Taranatha (1600)* (Varendra Res. Soc., 1983).
- Mallory, James P. and Adams, Douglas Q., *Encyclopedia of Indo-European Culture* (Taylor & Francis, 1997).
- Mallory, James P. and Mair, Victor H., *The Tarim Mummies* (Thames and Hudson, 2000).
- Morningstar, P. J. "Thandai and chilam: traditional Hindu beliefs about the proper uses of Cannabis," *J Psychoactive Drugs* 17, no. 3 (1985): 141–65.
- Morningstar, Patricia J., "Thandai and Chilam, Traditional Hindu Beliefs about the Proper Use of Cannabis," in *Orgies of the Hemp Eaters*, eds. Hakim Bey and Abel Zug (Autonomedia, 2004).
- Needham, Joseph, *Science and Civilization* (Cambridge University Press, 1976).
- Needham, Joseph, Ling, Wang, and Gwei-Djen, Lu, *Science and Civilisation in China. Chemistry and Chemical Technology* (Cambridge University Press, 1974).
- Ott, Jonathan, *Pharmacothoeon: Entheogenic Drugs Their Plant Sources and History* (Natural Products, Co., 1993).
- Parker R. C. and Lux, "Psychoactive Plants in Tantric Buddhism: Cannabis and Datura Use in Indo-Tibetan Esoteric Buddhism," *Erowid Extracts* 14 (June 2008): 6–11.
- Pourshariati, Parvaneh, *Decline and Fall of the Sasanian Empire: The Sasanian-Parthian Confederacy and the Arab Conquest of Iran* (I. B. Tauris, 2008).
- Ratsch, Christian, *Plants of Love: Aphrodisiacs in Myth, History, and the Present* (Ten Speed Press, 1997).
- Ratsch, Christian, *Marijuana Medicine* (Inner Traditions, 2001).
- Ratsch, Christian, *The Encyclopedia of Psychoactive Plants* (Park Street Press, 2005).
- Rawlinson, George, ed. and tr., *The History of Herodotus*, vol. 3, Book 4, Chapters 2–36, 46–82 (New York: D. Appleton and Company, 1885).

- Reiner, Erica, *The Assyrian Dictionary* (University of Chicago, 1995a).
- Reiner, Erica, *Astral Magic in Babylonia* (Diane Publishing, 1995b).
- Reininger, W., *Remnants from Historic Times*, in *The Book of Grass: An Anthology on Indian Hemp*, eds. George Andrews and Simon Vinkenoog (Peter Owen Limited, 1967); also in *Ciba Symposia* 8 (August–September 1946).
- Rosch, Manfred, "Pollen Analysis of the Contents of Excavated Vessels—Direct Archaeobotanical Evidence of Beverages," *Vegetation History and Archaeobotany* 14, no. 3 (2005): 179–188.
- Ruck, Carl A. P., Staples, Blaise D., and Heinrich, Clark, *The Apples of Apollo: Pagan and Christian Mysteries of the Eucharist* (Carolina Academic Press, 2001).
- Rudenko, Sergei I. *Frozen Tombs of Siberia—The Pazyryk Burials of Iron Age Horsemen* (University of California Press, 1970).
- Rudgley, Richard, *Essential Substances* (Kodansha International, 1993).
- Rudgley, Richard, *The Encyclopedia of Psychoactive Substances* (Little, Brown and Company, 1998).
- Russo, Ethan B., "Hemp for Headache: An In-Depth Historical and Scientific Review of Cannabis in Migraine Treatment," *Journal of Cannabis Therapeutics* 1, no. 2 (2001): 21–92.
- Russo, Ethan B., "History of Cannabis as a Medicine," in *The Medicinal Uses of Cannabis and Cannabinoids*, eds. Geoffrey William Guy, Brian Anthony Whittle, Philip Robson (Pharmaceutical Press, 2004).
- Russo, Ethan B., "Cannabis in India: Ancient Lore and Modern Medicine," in *Cannabinoids as Therapeutics*, ed. Raphael Mechoulam (Birkhäuser Verlag, 2005).
- Russo, Ethan B., "Clinical Cannabis in Ancient Mesopotamia: A Historical Survey with Supporting Scientific Evidence" (Unpublished paper 2005). I wrote to Ethan and he said most of that stuff was included in the following: Russo, Ethan B. "History of Cannabis and Its Preparations in Saga, Science and Sobriquet," *Chemistry & Biodiversity* 4, no. 8 (2007): 1614–1648.
- Russo, Ethan B., Jiang, Hong-En, Li, Xiao, Sutton, Alan, Carboni, Andrea, et al., "Phytochemical and Genetic Analyses of Ancient Cannabis from Central Asia," *Journal of Experimental Botany* 59, no. 15 (2008): 4171–4182.
- Sarianidi, Viktor I., *Temples of Bronze Age Margiana: Traditions of Ritual Architecture* (Antiquity, 1994).
- Sarianidi, Viktor I., *Margiana and Protozoroastrism* (Kapon Editions, 1998).
- Sarianidi, Victor I. "Margiana and Soma-Haoma," *Electronic Journal of Vedic Studies* 9, no. 1 (May 2003).
- Schultes, Richard Evans and Hoffman, Albert, *Plants of the Gods: Origins of Hallucinogenic Use* (McGraw-Hill Book Co. Ltd., 1979; reprinted by Healing Arts Press, 1992).
- Shaked, Shaul, "Quests and Visionary Journeys in Sassanian Iran," in *Transformations of the Inner Self in Ancient Religions*, eds. Jan Assmann and Gedaliahu A. G. Stroumsa, (Brill, 1999).
- Sherratt, Andrew G., "Cups that Cheered," in *Bell Beakers of the Western Mediterranean*, eds. William H. Waldren and Rex Claire Kennard, BAR International Series No. 331, Vol. 1 (British Archaeological Reports, 1987).

- Sherratt, Andrew G., "Sacred and Profane Substances: The Ritual Use of Narcotics in Later Neolithic Europe," in *Sacred and Profane: Proceedings of a Conference on Archaeology, Ritual and Religion*, eds. Paul Garwood, Robin G. Skeates, David Jennings, and Judith Toms (Oxford University Committee for Archaeology Monographs, 1991).
- Sherratt, Andrew G., "Alcohol and Its Alternatives: Symbol and Substance in Pre-industrial Cultures," in *Consuming Habits: Drugs in History and Anthropology*, eds. Jordan Goodman, Paul E. Lovejoy, and Andrew G. Sherratt (Routledge, 1995a).
- Sherratt, Andrew G., "Introduction: Peculiar Substances," in *Consuming Habits: Drugs in History and Anthropology*, eds. Jordan Goodman, Paul E. Lovejoy, and Andrew G. Sherratt (Routledge, 1995b).
- Sherratt, Andrew G., *Economy and Society in Prehistoric Europe: Changing Perspectives* (Princeton University, 1997).
- Sinclair, May, *Infamous Eve: A History* (Wheatmark Inc., 2007).
- Sneader, Walter, *Drug Discovery: A History* (John Wiley and Sons, 2005).
- Sullivan, Lawrence Eugene, *Death, Afterlife, and the Soul* (New York: MacMillan, 1989).
- Suzuki, D. T., *Essays in Zen Buddhism* (Grove press, NY, 1961).
- Touw, Mia, "The Religious and Medicinal Uses of Cannabis in China, India and Tibet," *Journal of Psychoactive Drugs* 13, no. 1 (January–March, 1981): 23–34.
- Van Baaren, Theodorus Petrus and Hartman, Sven S., *Iconography of Religions* (Brill, 1980).
- Waradpande, N. R., *The Rgveda Soma* (Sanskrit Bhasha Pracharini Sabha, 1995).
- Wasson, Robert Gordon, ed., *Soma: Divine Mushroom of Immortality*, Ethno-Mycological Studies Series 1 (New York, 1968).
- Wasson, Robert Gordon, "Soma of the Aryans: An Ancient Hallucinogen?" *Bulletin on Narcotics* 22(1970a): 25–30.
- Wasson, Robert Gordon, "Soma: Comments Inspired by Professor Kuiper's Review," *Indo-Iranian Journal* 12, no. 4 (1970b): 286–298.
- Wasson, Robert Gordon, "The Soma of the Rig Veda: What Was It?" *Journal of American Oriental Society* 91, no. 2 (1971): 169–187.
- Wasson, Robert Gordon, *Soma and the Fly-Agaric. Mr. Wasson's Rejoinder to Professor Brough* (Botanical Museum of Harvard University, November 1972).
- Wasson, Robert Gordon, "Soma Brought Up-to-Date," *Journal of American Oriental Society* 99, (1979): 100–105.
- White, David Gordon. *The Alchemical Body: Siddha Traditions of Medieval India* (University of Chicago Press, 1996).
- White, Gavin, *Babylonian Star-Lore: An Illustrated Guide to the Star-lore and Constellations of Ancient Babylonia* (Solaria, 2008).
- Widengren, Geo, "Stand und Aufgaben der Iranischen Religionsgeschichte," *Nuimen* 2, no. 1 (1955): 47–134.
- Widengren, Geo, *Die Religionen Irans* (W. Kohlhammer, 1965).